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The Australian COMMODORE and AMIGA REVIEW

September $3*

Amiga vs Atari

Review of Olympia printer • Freeze Frame Revisited • Programming:- Tape Rename, Spelling Checker, MPS 802 • Basic is Easy • Adventurer's Realm

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FREEZE MACHINE

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Editorial

MANY people ask about the future of the Commodore 64. As Amiga grows enviably stronger day by day, it seems that our old trusty rusty is being pushed out of the limelight and under into the closet.

At Commodore H.Q. in Lane Cove, Sydney the atmosphere is unmistakably Amiga orientated. However, plenty of third party support remains, with many companies pledging future support. In all there are in excess of 7,000,000 Commodore 64's in existence.

Even if Commodore stopped manufacturing the Commodore 64 tomorrow, it would die a very slow death. I think it will remain as the most popular choice for home computer buyers for some years to come.

Commodore have announced a new family pack for this Christmas, for just $399 and they anticipate selling more than 60,000.

Unfortunately some of the add ons they have promised over the years have never arrived. One which I certainly hope they continue to give favourable consideration to is the 256K RAM expander.

This would allow packages such as GEOS to operate much faster. The extra memory would be accessed like a virtual disk drive, meaning that moving graphics around the screen, and loading fonts would be almost instantaneous.

Rumours continue to abound of a Commodore 64 emulator for the Amiga. Commodore swear that although such a device may be under development in the states, there are no plans for any release in the near future. Third party manufacturers to the rescue again, this time at least three major distributors have promised that an emulator will be available before the end of this year. Maybe you won't have to throw away all your favourite games after all! ❑

Andrew Farrell

Ram Rumblings

$1.4 Million Ad Campaign

Commodore plans to spend $1.4 million in Australia during the next five months promoting its new products.

The campaigns put together by John Singleton Advertising will concentrate on Commodore's new Family Pack and Amiga range in the lead up to Christmas and will also promote the new Amiga 2000 to the business community.

Singletons plan to use radio, newspaper and television for the various campaigns with more than $1 million spent on television alone.

According to John Singleton no other personal computer company will be advertising as frequently or as aggressively as Commodore in coming months.

Singleton said, "When we first took over the Commodore account four months ago Atari, Amstrad and others signalled that they would give us a run for our money."

Commodore has stood by its decision to "beef up" its advertising campaigns but little has been heard from its competitors.

"It's 'put up or shut up' time, but I don't believe the competition can match the Commodore.

"We have put together strong campaigns, which will produce high sales growth at the detriment of Commodore competitors."

The use of John Laws in recent campaigns has worked well and it is intended that the theme "John Laws makes Commodore his personal choice" be continued.

John Singleton and John Laws explaining Commodore's advertising strategy to assembled journalists.

Commodore Credit Card

Commodore Computers has launched a credit card facility to assist its customers with purchases of the company's hardware and software products.

The new Commodore Card has been designed to assist cardholders to keep up with the latest developments in computer technology.

Commodore Managing Director Mr Tony Serra, said the introduction of the new credit card facility was the company's way of providing its customers with additional services.

Mr. Serra said, "Many Commodore customers are young people looking to set themselves up with complete systems."

"Our new Commodore card allows them the flexibility to fully utilise their Commodore systems immediately, rather than waiting to afford additional software or peripherals at a later date.

"We are an innovative computer company, continually developing new equipment and our customers take advantage of the latest in our technology.

"The card will be offered through our dealers to their customers on application. We will also offer the facility to new customers who wish to apply for one," he said.

Approved recipients of the card will be able to select from a wide range of computer products and charge them to their card.

"The card will allow the holder to purchase any of our products up to an approved credit limit on a revolving credit basis," Mr Serra said.

Cardholders have the option of paying their statement balances in full on or before the due date, or paying only the minimum amount due - which is 5 percent of the closing balance or $25 (whichever is the greater) or any greater amount up to the outstanding balance.

The Commodore Card carries no account or joining fees.

Mr Serra said the card offered several benefits to its merchants including improved cash flow because of guaranteed payment.

The Commodore Card has been developed by ACS Financial Services Ltd, a consumer based financer with major involvement in the development and management of private label credit cards.

New Family Pack

Commodore computers has announced the release of its new Family Pack which includes the popular C64 - the world's number one selling home computer.

The C64 has an installed base worldwide of over 7 million units. The Family Pack is not only loaded with new games but also business software, making it versatile for use by the whole family.

This year's bundled software includes *International Soccer, Wizard of Wor, Visible Solar System, Magic Desk 1 - Type and File*, a typewriter and filing system, and *The Financial Advisor*, a personal planning tool.

There's another Bonus too. To commemorate Australia's colourful history, Commodore has included a special book containing information on Australia's history titled - *Presenting Australia.*

But the most important thing is the price - $399 - $100 less than last year.

Commodore Managing Director, Tony Serra said, "This year's Family Pack is designed for the whole family. It's not just a games machine, but a tool for use by both parents and their children.

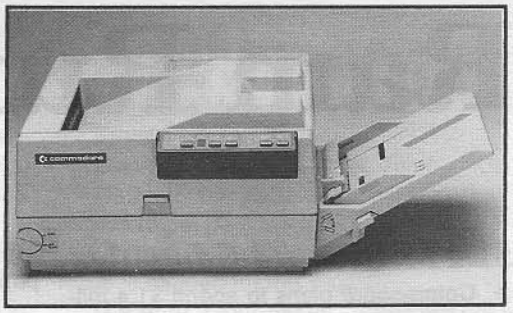
Sales forecasts are estimated at more than 60,000.

Printer Range Facelift

Commodore computers has announced a brand new range of printers to complement its business and home computer range.

The five new printers, priced from $499 - $3999, include the flagship of the range, a low cost laser printer.

Right: the new Commodore LP 806 Laser Printer



The new printer range follows a $12 million two year agreement with Australian OKI printer distributor IPL-Datron. The deal involves the supply of the printers tailored to particular Commodore specifications.

The MCS 810 and MCS 820 at $499, are low cost colour and black and white machines. According to Commodore the 24-element printhead allows up to 100 different colour shades with exceptional definition and clarity. They're also capable of graphics, charts, illustrations and acetate transparencies for overheads.

Middle of the range is the MPS 280 at $899. This lightweight, multifunction printer provides expanding businesses with the right features at the right price.It is designed for Amiga and PC users who need 136 column (16inch) reports for accounting and spreadsheet use.

Top of the line is the MPS 2020. For those users requiring speed and quality, coupled with the ability to also print in colour, recommended retail of $1299.

The Commodore LP806 Laser Printer is the flagship of the range. This whisper quiet, high speed machine is suitable for enhanced wordprocessing or "Desktop Publishing" applications.

The laser printer is so affordable at $3999 that even small and medium sized businesses using a Commodore PC, Amiga or compatible can purchase their first laser printer.

Repco Goes Commodore

The Australia-wide auto component group Repco Corporation has chosen Commodore computers as its prime supplier of PC equipment.

Commodore computers will be installed into a large number of Repco owned outlets including Woodys, Pederson Australia, Super Auto Stores, and recommended to all the franchised Repco outlets as part of a commitment to computerise the company's complete point-of-sale system.

Commodore's dealer network across Australia will be responsible for installation and after sales service will be offered through Commodore's 53 Commcare centres.

Repco decided in favour of Commodore because of its Australia-wide network, the local commitment to the product and the available resource of the Commodore organisation world-wide.

Test sites in Victoria and Queensland have shown that the Commodore PC-40 and PC-5 are quality products for Repco needs and absolute value for money.

They will allow Repco to network their outlets around Australia to central ordering and stock control points in each city.

Commodore Managing Director, Mr Tony Serra, said the Repco deal continued Commodore's push into the corporate sector.

"We are already working on two other major multi-million dollar Australia-wide deals which will follow in the next few months, he said

"It has been my stated objective to make Commodore a $100 million company in Australia by 1990 and we are well positioned to make this a reality."

Repco's point-of-sale systems will operate using the Breeze POS software package. Suppliers of peripheral equipment to Commodore's computers of which there are two options include:

OKI - Printers
Epson - Printers
Citizen - Printers
Netcom - Modems
General Office Equipment - Novel Software and Interface Card. ❑

The Commodore 128

...so powerful, it's 3 computers in 1

It's a productivity computer!

The Commodore 128 will amaze you with its new generation of powerful yet easy to use productivity software. Like 'Jane', which allows you to follow simple symbols instead of typing complicated commands. And because it's so easy to learn, you'll have the 128 working hard in minutes! You get 128K of RAM both 40 and 80 column displays, and 16 colours for graphics.

It's a family and education computer!

Switch to Commodore 64 mode and you can use more than 3,000 software packages proven on the Commodore 64, The World's No. 1 selling computer. That's power – power for studying, word processing, education, home accounts, programming, fun and games and much, much more.

It's an advanced business computer!

The Commodore 128 lets you use software packages like 'Wordstar, dBase II and Supercalc', all in 80 columns. The Commodore 128 gives you all the computing power most businesses will ever need now or in the future.

Power without the price. $699.

The Myth of ST Superiority

One of the hottest debates of 1987 has been that of the Atari ST's supposed superiority over the Amiga. Sheldon Leemon attacks the argument in this article, which originally appeared in Computer Shopper. *We have reproduced it here to help you draw your own conclusions.*

Question:

Which is better: The Atari ST or the Amiga?

Even when based strictly in fact, the comparisons made during such debates strongly tend to resemble the four year old's "my dad can beat up your dad" type of argument. The most vocal element on the Atari side is ignoring the facts entirely.

These avid Atarians spout the "party line", a mixture of misconception and deception, no doubt inspired by a strong dose of what we in the industry call "Amiga envy". Nowhere is this line more strongly espoused than at Atari itself as seen by the interviews with Leonard and Sam Tramiel that recently appeared in an article for *MicroTimes* by Mary Eisenhart.

By chanting the same lame half-truths over and over again, Atari advocates have promulgated a number of myths concerning the ST and Amiga computers, that are being accepted in some quarters as the gospel truth.

I would like to shed the light of reason on these superstitions. I cannot claim strict impartiality, since I personally prefer the Amiga to the ST. But, I can claim an intimate acquaintance with the workings of both machines. I am a registered developer for both machines. I have had my ST since June 1985, and my Amiga since September of the same year. I have read the developer's materials and just about everything else available for both machines. I have written two books about the Amiga, and plan to write at least as many for the ST. I have programmed both computers in C and machine language. I have experienced first-hand the advantages and disadvantages of both machines.

The following observations, if not absolutely unbiased, are grounded in demonstrable fact. They are not meant to be the definitive comparison of the two machines, but to respond to the myths and misconceptions about the Amiga that now seem to run rampant.

Myth 1:

The ST is much faster than the Amiga. The first misconception is the notion that the Amiga's coprocessor chips slow down its operation.

In some rare cases, the Amiga coprocessor chips do steal cycles from the 68000 microprocessor. But never when the Amiga is in any of the graphics modes supported by the ST. In 640x400 mode with two colours, 640x200 with four colours or 320x200 with 16 colours, the custom chips never slow down the 68000.

Even using some modes that are not supported by the Atari, like 320x200 with 32 colours, the custom chips have no effect on processor speed. You can have the music chip doing music and disk I/O and have great graphics going on without involving the microprocessor.

Sam Tramiel is quoted in the *MicroTimes* article as saying "None of our modes steal any processing power from the CPU: that's something we weren't going to allow." The way they accomplished that was to limit graphics modes to the same choices offered by the PCjr. They left out any modes that might give them trouble.

The Amiga put these modes in, and left the choice up to the user and the programmer. For those situations where graphics power is more important than computation speed, the Amiga can handle a 640x400 display with 16 colours the ST can't under any circumstances.

If computation speed is critical, you can cut the Amiga display back to 640x200 or 320x200 with only 1 bit plane for colour (two colour mode). This means that there is only 16K or 8K of display memory to manage. The Amiga gives the programmer (and the user) the option of using as much as four times as much memory for the screen display as the ST, or as little as one quarter as much.

Isn't it strange that the Tramiels always assume in their speed estimates that the Amiga will always use MORE display options than the ST provides? Is that their way of saying that the 640x400 with two colours or 640x200 with four colours isn't good enough? If so, it's bad news for Atari owners, because their display resolution doesn't get any better than that.

Next point. Even the slight (and highly overestimated) slowdown that occurs in the rare cases where you use all of the Amiga's graphics capabilities at once can be eliminated completely by adding external memory.

The slowdown only occurs when all of the graphics are being used and the custom chips are using the same area of memory that the program code is in. If you add a meg of external memory to the Amiga, the custom chips use the internal memory, and the program is put in the external memory. This gives you "Power Without the Price."

Adding memory to the Amiga (up to 8 meg) is a simple matter of plugging in a board on the side. Adding memory to the ST involves carefully soldering memory chips on top the chips on the mother-

board, and patching in connections with wire. The Atari OS does not support more than 4 meg of RAM, even though the 68000 processor can address four times that much directly.

The most absurd notion of the lot: that the custom chips slow down the computer's throughput. The whole point behind their design is to free up processor time by performing tasks independently that ordinarily would be done by the 68000. Graphics is the prime example.

Atari is quick to point out the instances when the Amiga custom chips steal processor time when drawing graphics. They are less eager to mention that when the ST is drawing graphics, 100% of the processor time is consumed in the process.

When you draw a line on the Amiga, the processor tells the blitter where the starting and end points of the line are, and then goes back to serious computing, while the blitter actually manipulates the display memory in order to draw the line.

On the Atari, the program has to use the 68000 to calculate each point of the line, and to set every memory location on the path of that line a byte at a time. While it is doing this, the processor cannot do anything else - in effect all of its cycles have been stolen.

So in the rare cases when the Amiga's custom chips steal cycles (did I mention that this never happens if you stick to the ST's rather meagre set of graphics modes?), i's 68000 still gets some processing time while the drawing is going on whereas the ST's gets absolutely none.

Just think of that every time you see that ST mouse pointer flickering across the screen. Its 68000 is huffing and puffing just trying to update the pointer display ("hmmm..I've got to redraw these pixels, save the background display memory, then redraw the background, save the new background and redraw the pointer"). On the Amiga, the pointer is a hardware sprite, so the 68000 just tells it "move there," and goes about its business.

In many cases, the Amiga will work much faster than the ST. Particularly true during graphics drawing, when the blitter does all the work and leaves the 68000 alone. And in graphics-based systems like *GEM* and *Intuition*, drawing goes on all the time. Most importantly, even displaying text on the screen is a graphics operation. Since the ST has a bit mapped display rather than one that is character mapped, each dot of each character has to be drawn with by the 68000. When you are printing or scrolling text on the ST, the processor has its hands full and can't do anything else.

On the Amiga, the blitter moves the whole block of bits for each text character, leaving the 68000 to do the computing, not drawing text. A graphic example can be seen by running the BASIC program:-

```
FOR I=0 TO 255: PRINT CHR$(I) : NEXT
```

on the ST. Such slow printing hasn't been seen since the TI-99/4A (this is as much a fault of its cheap BASIC interpreter than it is the system design).The ST doesn't look so powerful, does it? Why do you think that Atari is trying so very hard to incorporate a blitter chip into its ST series?

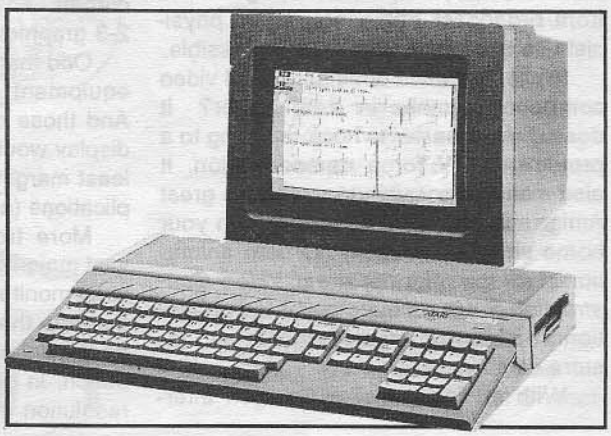
In the *MicroTimes* article, Leonard Tramiel is further quoted as saying "If you're going to do a graphics but engineering-intensive program, *depending what mode you're running in*, it'll run a factor of three times faster on an ST than on an Amiga" (italics added). Hopefully, we've already exposed the fraud of that "depending on what mode" since the Amiga does not slow down any mode comparable to the Atari display. We must conclude that the determining factor is clock speed, and as Leonard himself pointed out, the lead of the Atari is 15%. So where did he get the "three times faster" figure?

Perhaps he meant if the Amiga was running that application and three others at the same time, because no known benchmarks bear him out. All of the benchmarks published show a tiny advantage to the ST, consistent with its slightly faster processor speed. Many give the edge to the Amiga, showing that often a benchmark is more a test of the compiler than a computer, and that differences in compiler efficiency can easily compensate for the small difference in processor speed.

While the Atari may compute results slightly faster than the Amiga, heaven help us if it has to print them. Or scroll the printing. The Atari ST is not the speed demon that Leonard Tramiel depicts, nor is the Amiga the plodding tortoise. Hands on experience with both machines leads to a different impression.

Myth 2:

The ST display is much better than the Amiga's. The problem with this assertion is that most often, it is made on the basis of comparing the ST and its colour monitor with a similar picture on the Ami-



ga and its colour monitor.

This proves nothing, since it involves two variables, the computer and the monitor. When comparing the two monitors side by side, it's natural that the Atari display looks sharper and crisper, since it's smaller (the old Mac trick). Try running the Amiga display to a 9-inch Sony hi-res monitor.

Also, the Atari monitor can be matched very closely to the machine, since it is basically useable only with that machine (it runs only in analog RGB mode, and has a plug that is even wackier than the one used by the Amiga). The Amiga monitor is designed to function as an analog or digital RGB monitor, as well as a separated composite monitor, so it can be used with an IBM-PC or Atari 800XL.

The only way to compare the video quality of the two machines is on the same colour monitor. Those who have run both machines on the same display give a slight edge to the Atari. This may be explained in terms of a design tradeoff on the part of the Amiga.

The Atari ST is designed to work with its own monitors. The Amiga is designed to work with every kind of monitor (and TV set). The Amiga was designed with video applications in mind. The reason that the clock speed of the Amiga is 7.2 MHz and not 8 MHz like the ST is that the former figure is an even multiple of the 3.59 MHz colourburst crystal used in colour televisions, so that using that clock speed makes it easier to sync the display to a TV set.

When I first saw a prototype Amiga, I was amazed to see that it could display clear 80-column text on an ordinary TV set. When I reported that fact, I got Email from broadcast engineers, video physicists saying that is was flatly impossible.

What difference does full NTSG video compatibility make in a computer? It does make it easier to hook the thing to a projections TV for a demonstration. It also makes it possible to use those great Amiga graphics for video titling on your home video productions. Or use animation packages like the great *Video Construction Set* to produce animated promotional videos for advertisements and in-store displays.

With an inexpensive Genlock interface such as the one Commodore has displayed (and hopefully will soon produce), it will be possible to use the Amiga to replace about $50,000 worth of video equipment for less than a tenth of that cost.

According to Leonard Tramiel "the ST was designed to be a powerful, flexible machine, in as many directions as possible," Atari seems to have neglected the direction of video production work. By confining the ST to its own somewhat nonstandard displays, it has ignored an extremely under developed market segment. The enormous flexibility that the Amiga's video capabilities offer to user are well worth the slight advantage in display clarity that it cedes to the Atari when it comes to analog RGB monitors.

> "The Amiga is designed to work with every kind of monitor (and TV set)."

The other part of the myth of the ST's video superiority concerns its monochrome display mode. Quoting Sam Tramiel from the article cited above: "There's no monochrome mode on the Amiga, you can't run a 640x400 high-resolution monochrome machine. So for serious business applications, terminal applications, you just can't do it."

The first misconception is that a 640x200 display is not suitable for serious business use such as "terminal applications." That is the very display resolution of the IBM Color Graphics Adaptor which is the current standard among business users (since the IBM monochrome adaptor cannot display Lotus 1-2-3 graphics).

Odd that Atari would argue that IBM's equipment is not suited for business. And those of you who have a 640x200 display would probably agree that it is at least marginally suitable for terminal applications (and many others).

More troubling is the fact that the vast majority of ST owners have only the color monitor, whose maximum resolution mode is the exact same as that offered as the default mode of the Amiga Workbench. In order to make use of all three resolution modes offered by the ST you need to buy two separate monitors.

In order to switch between medium and high resolution modes on the ST, you have to unplug one monitor, plug in the new one, and reboot the computer - there is no convenient way to make the switch.

Some of the software written for the ST's colour monitor will not work on the monochrome display. While the Atari monochrome monitor does offer an extremely nice small text display, very few ST owners use it as their only monitor. Atari has stockpiled such a quantity of monochrome monitors that they have been giving them away lately - their dealers get one monochrome monitor free with every ST and disk drive that they buy.

Therefore, it seems unlikely that we will see any software in the near future that relies on the 640x400 resolution capabilities of the ST, since most ST owners just do not possess this capability.

One last point about the ST display. While the colour 640x200 4-colour mode has become the de facto standard for the ST, in one respect it is the least pleasant to use. Because of space limitations, Atari opted to include only one set of graphics data for its desktop icons. Since the 320x200 mode and the 640x400 mode have the same aspect ratio, they choose graphics that would look good in these two modes.

In the 640x200 mode those icons look ridiculous - they are tall and skinny, half as wide as they should properly be. They give the impression of an El Greco version of *GEM*. So it is somewhat ironic that having chosen to use only one set of icon graphics, Atari picked the set that would look the worst in the mode that is used the most on its machines.

The other misconception in the above quote is that the Amiga does not have a useable 640x400 display mode. With the current colour Amiga monitor, it is not possible to use 640x400 interlaced text because of the "jitter" of the low-persistence phosphor display. Careful color selection and placement can be used to avoid the problem.

For example, the Digi-View digitizer can create black and white digitized images in 640x400 resolution with 16 grey

levels, and those extremely fine images do not "vibrate" in the least on the current colour display. The user can always get a separate monochrome monitor that uses a high-persistence phosphor, and enjoy 640x400 resolution without the jitter.

Such monitors are fairly inexpensive, and recent changes made by the 1.2 version of the Amiga Operating System enable the use of a 640x400 Workbench environment.

The brightest prospect of all is the potential use of analog RGB monitors with high-persistence phosphors. Several such monitors are on the market now, and Commodore-Amiga had them at the Spring Comdex. The Amiga colour display in 640x400 mode on such a monitor is every bit as good as the 640x200 display on the current Amiga monitor, and the persistence of the phosphor was not high enough to cause "trials" when the screen scrolled.

While it is true that these monitors currently sell in the $1000 price range, the same was true two years ago of the kind of monitor now used with the Amiga. There seems to be no reason why the price of such monitors cannot come down to the same level as the present Amiga monitor. And there are newer monitors coming on the scene that can digitally store and combine the two frames of an interlaced display, creating a non-interlaced display from them.

In short, there is every chance that in the near future we will see an affordable monitor that can be used for all of the Amiga graphics modes, including 640x400 in 16 colours. In the meantime, the truly fanatic Amiga user may buy one colour monitor for display resolutions of 640x200 and below, and a separate monochrome for 640x400. Just like the Atari ST.

Myth 3:

The Amiga Operating System changes so often and is such a mess that nobody can program the machine. This is a leftover from the pre-release days of the Amiga. The developers who had to work with the earliest versions of the Amiga had an uphill battle, not because the operating system was so buggy, but because half of it hadn't been written yet!

According to MetaComCo, it was not until February 1985 that they produced the very first prototype disk operating system for the Amiga. Until that point, you could not even read or write a disk file conveniently.

In contrast, the ST was almost ready to ship to developers by then. Considering the amount of catching up the Amiga had to do, and the time its developers had to do it in, it's small wonder that the operating system was changing "every week".

ST enthusiasts seem to be greatly amused that the internal version number of the Amiga OS is already up to version 33. This amusement reveals nothing so much as a lack of any programming experience.

For example, a piece of software has gone through 11 beta versions in the past 6 weeks. Since each one represents a number of compiles, the version number depends mostly on how many times you stop to number the program. In no way should it be construed to mean that developers have gotten 33 different

version of the Operating System to work with. Only a handful of developers outside of Amiga ever saw a version lower than 27.

The vast majority of developers received the official release version as their first version of the operating system. They have been faced with exactly one revision of the OS since the machine's release (with another one in the works). This record compares quite favourably to machines like the Mac, and even the ST, which has had a similar number of OS revisions since its release.

The Amiga revisions have maintained upward compatibility, so that software that worked under the older versions will still work under the newer versions - something that is not necessarily true of the Atari (there are some programs that do not run under the TOS ROMs that did under TOS in RAM, though of course, you can always load the RAM version if necessary).

Though the Amiga Operating System is far from perfect (and will undoubtedly be improved in the future, since it is not locked in ROM), it is a system that was designed for maximum flexibility and expandability. There are many design features that support future hardware enhancements, such as OS support for screens as large as 1024x1024 pixels.

The Amiga OS is designed to support the 68020 processor and the 68881 floating-point coprocessor. A third party maker of 68020 boards, CSA, was able to plug their replacement board into the 68000 socket of the Amiga and get it to run Amiga DOS with no modification.

The ST's version of *GEM* would have to be completely re-written for the 68020, making it highly unlikely that current version of ST software will ever benefit from the speed of the '020. Some programs may be ported, and present ST owners who upgrade to an '020 box using their current ST as a terminal will still be able to run the software on the 68000 side, but you will not be able to just stick an '020 in the box and have the software run the way you can with the Amiga.

Ditto for '881 floating-point coprocessor support.

The virtues of the Amiga Operating System are too numerous to discuss in detail here, but we cannot move on without mentioning the one feature that the Atari community is most anxious to overlook, multi- tasking.

This feature alone raises the Amiga OS to entirely different plane than that of the ST. Those who have not had the benefit of this feature may think that since most of us are used to doing one thing at a time, multitasking is no more than a flashy gimmick. Those who have had the chance to use this feature think otherwise. For example, an Amiga owner recently told me of his amusement upon reading the complaint of an ST user about a terminal program that would not allow him to format disks while online.

With the Amiga, you can run a word processor, format disks, and play a game simultaneously while online! Wouldn't it feel great to just pull down that window to reveal the desktop, and start up another program without closing the current one?

Of course, as ST owners would be quick to point out, *GEM* can multitask. There are always desk accessories that can be launched from your program (though most of the time, you can use either the program or the accessory, but not both at the same time). And there are operating system add-ons like the soon-to-be-released Micro RTX that is supposed to add a fair level of concurrency to *GEM*.

But these are no real match for multitasking built into the lowest level of an operating system. Such a system allows any program to multitask with another, subject only to the limitations of display space and memory.

It is only fair to point out that the ST has certain problems in that area itself. In the words of Russ Wetmore, a programmer who has worked with the ST as intimately as anybody, and a man who is one of the leading lights in the Atari programming community, "I hate *GEM*. I hate *GEM*. I hate *GEM*. Did I tell you that I hate *GEM*?" From a programmer's standpoint, *GEM* can be cumbersome to work with.

But what is far worse than *GEM* is Atari's implementation of it. Or rather, lack of implementation. Big chunks of it are still missing. Things like software-loaded fonts and virtual device drivers. Lack of the latter is quite serious, since it is one of the core elements of *GEM*. Currently, the ST has global support for its own printers, and the Epson.

As a result, application programs have to kludge together their own support for other printers, the very thing that virtual devices are supposed to prevent. So you have to track down a *First Word* printer driver and a *Degas* printer driver.

On the Amiga, there is global support for a dozen printers supplied with the system, and third-party and public-domain support for dozens more. Installing just one printer driver allows your printer to work with any program. That means all of the special features too, such as bold print, italics, underlining, and custom line spacing.

Atari has been promising for months that a GDOS addition to *GEM* will be available Real Soon Now. This addition is supposed to supply some things like the missing fonts, and graphics support for additional printers. But it will not include the level of global support for special printer features found in the Amiga.

Even if the ST version of *GEM* was as complete (and bug-free) as the IBM PC version, it would still lack some of the nice "extras" found on the Amiga. Like user-definable keymaps. A built-in speech synthesis device and text-to-speech library. Even fundamental things like a built-in command line interpreter.

But there is no reason to belabour the point. As you shall see in the next section concerning software, enough fine software has been produced for the Amiga to belie the charge that it is impossible to program the machine because of its OS.

Myth 4:

There's a lot more software for the ST than there is for the Amiga. To find out how much software is available for a particular computer, the traditional test is to stack up all of the diskettes one on top of the other to see how high the pile reaches.

By this measure, the contest is very close. If you look at the catalogues of available software put out by Amiga and ST for their dealers, you will find a similar number of listings for each. (*In Australia there tend to be fewer of both, but far fewer of Atari software - Ed.*)

Sheer quantity does not mean much. I remember a period when every time I would walk into an Apple dealer's showroom, the salesman would start in on how there were over 20,000 software packages available for the machine. I would look around, and see only two or three dozen of those packages on the shelf. What happened to the other 19,964, I would wonder? Are they storing them in the back room or are they just too dreadful (or useless) to sell?

When you come right down to it, a handful of packages account for most of the software sales. So the best strategy seems to be to compare the most important packages in each category.

Word Processing: So far the ST has the numerical advantage over the Amiga, with *STWriter, First Word, Regent Word,* and *Final Word* to the Amiga's *Textcraft, Scribble* and *Write Hand.* (Wordperfect, Textcraft Plus *and* LPD Writer *have since been released for the Amiga - Ed.*)

In terms of quality the call is a bit closer. True, *Textcraft* is something of a dog though its replacement, *TextCraft Plus,* is much better, and *Scribble* is not as fully debugged as one could wish. But *STWriter* is no *GEM* itself since the package does not take advantage of the user interface, and *First Word* has its deficiencies too.

In this department neither machine has much to brag about. The top fifty word processing programs for the IBM PC are all better than anything either can offer. (Wordperfect *is one such top package, now available on the Amiga, with more on the way!* - Able-1 *will be released soon... - Ed.*)

Both machines have some good packages waiting in the wings. Batteries Included is doing *Paperclip Elite* for the ST, and it will probably show up on the Amiga as well. Atari has just announced an OEM agreement with Microsoft for a stripped-down version of *Microsoft Word* called *Write,* and Wordperfect Corp. has announced a version of the highly-acclaimed *Wordperfect 4.1* for the Amiga.

Spreadsheets: Both machines have a pretty fair *Lotus* clone available. In fact, it's the same one, the *VIP Professional.* Despite early complaints about the first Atari version, the Amiga version appears to work OK, though the program allocates all unused memory for itself, a definite no-no for multitasking.

Maxi-Plan for the Amiga takes advantage of the user interface (mouse, windowing, pull-down menus). So far, the software in this category for both machines is just adequate. Close, but no *Excel.*

Database: Again, the most "respectable" product for both computers is the same one. *DbMan* from Verasoft. Again an IBM software clone, being *Dbase III* compatible. Both machines also have databases that use the windowing interface to better advantage, but are less powerful. (Amiga also now has *Acquisition and SuperBase*)

In general, there are a number of titles for each machine, but nothing to challenge *Paradox.* We will no doubt see packages with more power and a better user interface on both machines in the near future. The final score is that each machine gets a "barely adequate".

Accounting: Each machine has

some accounting software (*Rags to Riches* and *Financial Plus* on the Amiga, Sierra Online's *One-Write System* on the Atari), but again, nothing good enough to dominate the market. *Dac Easy*, the program that has been a huge hit on the PC, has been announced for both machines.

CAD-CAM: Neither *Aegis Draw* on the Amiga side or *Easy-Draw* on the Atari is AutoCad. *CAD-3D* is excellent, but not something you'd call an engineering tool. *Dynamic-CAD* on the Amiga may turn out to be a bit closer to the industry standard. Neither machine will take over the market on the basis of current software though.

Graphics: The Atari trio of *Dega, N-Vision* and *Neo* are no match for the Amiga's *Deluxe Paint II, Images, DigiPaint* and *Graphicraft*. Tom Hudson will try again with *Degas Elite*.

One area in which the Amiga clearly has the advantage is in graphics standards. Since Commodore-Amiga took the lead in adopting Electronic Arts' IFF (Interchange File Format), all Amiga programs save their graphics files in exactly the same format, which means that every program can use the graphics output of every other program.

For example, every drawing program on the Amiga can be used to create new objects for *Deluxe Paint*, EA's superb print shop type program. You can also take the output from video digitizers (see below), and read those digitized images into either Paint or Print files. And data base packages that let you use IFF graphics fields on the Amiga are right around the corner as well. (Acquisition, *and* SuperBase - *Ed.*)

The situation on the Atari is very different, as each paint package has its own format. It is interesting to note, though, that *Degas Elite* is supposed to support the IFF standard as well. Bringing these two computers closer together in any way possible is a great idea, since the real enemy is the boredom machine from Intel and Big Blue.

Another area in which the Amiga firmly has a lead is in graphics animation packages, since there are two for that machine and none for the ST. EA's *Deluxe Video* is of special note, since it is an amazingly powerful tool for putting together animated promotional videos.

It allows you to put together animated videos featuring music, digitized sound effects, and a full range of video effects. All of this can be taped on a VCR. There is less of a demand for such software on a machine like the ST which does not have an RF modulator or any standard composite output.

Music: *The Music STudio* is about it for each machine so far. Users who have tried it on each machine seem to favour the Amiga version. Neither are worth writing home about, though Electronic Arts has put out *Instant Music* for the Amiga, but most are betting that its *Deluxe Music* package will be the one to beat. (*It's out and it is - Ed.*)

ST users may be surprised to find that the Amiga version of *Music Studio* also supports MIDI, through one of several optional adapters that cost under $50. In fact, some say the Amiga version has better MIDI support. In addition, Memetics is just about to release their *Midi Workshop* program for the Amiga.

In summary, each machine has a fair assortment of software, considering the amount of time that each has been on the market. Neither poses a threat to the IBM or even Macintosh at this point, however.

Myth 5:

The Amiga is just a "game machine." You would think that the words "game machine" would never be spoken at the new Atari, since no company has suffered more (and undeservedly so) from that image. In the interview cited numerously above, Sam Tramiel is quoted as saying, "The Amiga's a great game machine... It's a great, fast, low-end game machine." It takes almost unbelievable gall for a man who should know better to dismiss a hardware marvel like the Amiga as nothing more than a toy.

If you told a PC user that IBM was going to come out with a true 16- bit computer that ran as fast as the AT, came with a built-in 880K 3.5 inch disk drive, a half meg of RAM, expandable to 8 1/2 meg, a fast colour graphics display, built-in serial and parallel ports, and a true multitasking operating system he would probably say, "What a great business machine!"

But apparently Sam Tramiel hears the same specifications, specifications remarkably similar to his own computer and thinks "You could play some really big game programs with 8 meg of memory. And you could store tons of games on an 880K floppy or 40 meg hard disk. And that multitasking is really great for playing a whole lot of games at the same time." This from a man who sells his computers through Toys- R-Us.

The whole notion of a "game" computer that is not powerful enough to run "real" software like an accounting package could only be supported by someone who just doesn't know how computers work. Any programmer will tell you that most of the time a business package sits there loafing, waiting for the user to hit a key, and when he does hit it, the program can take its own sweet time responding.

Not so when that user is tugging on a joystick, trying to shoot at alien monsters while dodging laser blasts. A game that features fast-action real time animation requires every ounce of computing power that a computer can muster, because if the speed isn't there, there is no way to fake it.

Those space ships aren't going to come screaming down at you in formation, and you won't be able to fire fifty blasts per second while dodging them.

Did you ever wonder why you don't see a lot of great arcade games for the PC? Try programming one on a computer that combines a slow processor with slow graphics. Those are the same characteristics that cause the "serious" business user to tear his hair when he tries to get a really big spreadsheet to recalculate, or has to wait for Auto-Cad to redraw a complex object.

Anyone who suggests that a computer that has the raw power required to run great fast-action arcade games like *Marble Madness* cannot handle the strain of sitting around for millions of nanoseconds waiting for some bozo to press a key on his word processing program is using his head for a hatrack. That's like saying the Lotus is a nice car for frivolous sports like racing, but that you couldn't possibly use it for "serious" driving chores like going to the store to buy some milk, or delivering pizzas. ❑

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Up-date Freeze Machine

Last month we tested the pre-release version of the Freeze Machine. Since then the glitches have been fixed, and new documentation written. Andrew Farrell takes a brief second look at this device.

DID we intentionally mislead you? No. Apparently the Freeze Machine cartridge we reviewed last month had a few glitches in it which I am assured were due to a faulty batch. One managed to slip our way.

Since then the real manual has been written and produced, and the cartridge itself works fully. Micro Accessories very effiently flew us this latest version for an update.

Last month I had problems getting the fast loaders in both Lazer and Fast load modes to work fully. Programs would LOAD but not RUN. Part of the problem was that the then sketchy instructions were a little vague on just what to do.

The latest set are a big improvement. They start by explaining that there are two different fast loaders, a point that the earlier version tended to brush over too quickly.

Freezed files are automatically transferred to the very fast Lazer format, however normal program files may also be converted. With either Lazer Boot or Fastload Boot, you simply LOAD the first program on the disk. A directory will appear. Move the cursor to the program you want to LOAD and press return for Lazer Boot or F3 in the Fastload boot.

This time it worked! Lazer boot is without doubt one of the fastest disk speed ups I've seen. The best part is that you don't necessarily need the cartridge in place for it to work.

A few of our readers have had problems using the Game Killer option. Next month we will be publishing some hints and tips on games we've tried this option on. So stay tuned. ❑

```
LAZER UTILITIES:
    L  -  LOADER/DIRECTORY
    F  -  FAST FORMAT
    C  -  COPY
    X  -  CONVERTER
    E  -  ENHANCEMENT DISK
PRESS RESTORE FOR STARTUP MENU
```

L - LOADER /DIRECTORY. . .will display the current directory of a disk and present you with the ready prompt at this stage you have access to a variety of disk commands, eg.

@S:FILENAME	- Scratch a file (NOT USR)
@N NAME,ID	- Format disk
@N:NAME	- New a disk
@I	- Initialise drive
@V	- Validate disk (NOT USR)
@R Newname=Oldname	- Rename a file
%FILENAME	- as LOAD"Filename",8,1
FILENAME	- As LOAD"Filename",8:RUN
$ or F7	- Display directory
F5	- As LOAD"*",8,1

The Computermate Utility Stand

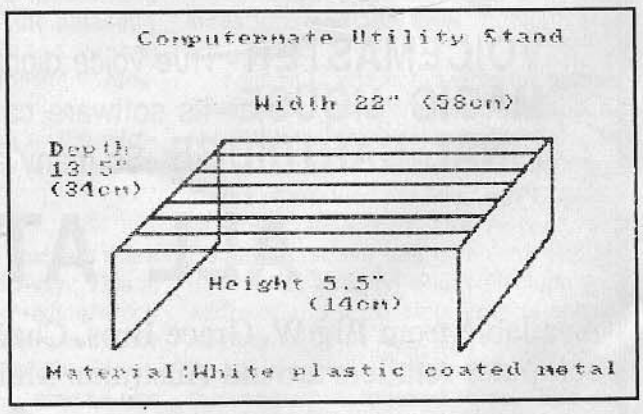
by Eric Holroyd

HERE'S a useful piece of equipment for your computer room. It's a very functional Utility Stand which can be used for all kinds of things. You could put two disk drives underneath it, the monitor on top, and the keyboard in front of it for a nice, neat desk. Clearance underneath is 5.5". If you prefer, your printer could go on top of it with the stack of paper underneath it. It's wide enough at 22" to take a 15" wide business printer and still leave room for other bits and pieces.

Talking about printers, the same company supplying this item also has a range of 10 different coloured ribbons to suit most printers so you can brighten up your printouts with colour very easily.

If your business involves doing video demonstrations the stand will take the TV/Monitor on top and the video unit underneath. The stand is very sturdy, being made from white plastic-coated 1/2" steel bar so it's plenty strong enough. There are many uses for this versatile stand and if your office or study is so well organised that you don't need it for the equipment you can always put the pot plants on it!

The "Utility Stand" around $22.50 is distributed by Computermate, 9 High Street, Mount Kuring-Gai, NSW 2080. Phone (02) 457-8118 ❑



The C-128 Cannon

by Eric Holroyd

The copying or archiving of software is a subject guaranteed to provoke discussion, yet it's something we all need to do from time to time whether we need to copy a full disk or just a single file.

THERE have been numerous articles on software piracy in this and other magazines and in fact our illustrious editor invoked the wrath of some User Groups recently when he went into print on the subject. Apparently some user group leaders were so incensed that the Editor might be referring to them that they discontinued (or threatened to discontinue) their subscriptions to the magazine. Of course, Mr Farrell's later explanation of his original article helped to clear the air a little, but the fact remains that software copying is a very touchy subject.

Having said all that, I want to tell you about a program that does copy software and on the C-128 in its native mode. It's called the *128 Cannon* and is from the American company, Kracker Jax.

The program is for the C-128 coupled with 1541, 1571 or 1581 disk drives. The latter is a 3.5" drive as yet unknown to the Australian market, but the first two are in wide use here. The copiers on this disk are all for use with either one or two drives and comprise Fast Copy, Nibble Copy and File Copy programs.

As most computer users know, software manufacturers use various copy protect methods to prevent their valuable investment from being pirated. In turn, other software companies specialize in making programs available to defeat those copy protection methods. As fast as the first mob come out with a new protection method the second lot analyze it and put a program on the market which will defeat it. This is the way it seems to me, and whilst it's a vicious circle it does keep the wheels of industry turning so to speak.

The American Federal Copyright Act is quoted on the *128 Cannon* as saying that "An owner of a copy of a computer program is entitled to make a new copy for archival purposes only."

This then is the reason for the proliferation of copy utilities in the USA, as users all apparently want to make their own backups in case of something going amiss with the original. (In fact it's good practice in my book to work from the backup and preserve the original.)

Many software companies make backups available to registered owners of their programs and most are reasonable, although if your original has crashed and you need it this weekend it's little comfort to know that the backup is going to be put in the mail next Monday morning in answer to your desperate phone call.

I feel also that some software companies charge a little too much for a backup to a registered owner, with one Sydney company that I know of charging $16.50 for the disk plus $3.00 for postage and handling. A little excessive, I think.

> "An owner of a copy of a computer program is entitled to make a new copy for archival purposes only."

In view of all of this I think it's a good idea to have in your library a good copy utility to make **backups for your own use only** of important software that you've already purchased.

This brings me back to the *128 Cannon* . . .

The Fast Copy is for use in copying unprotected disks like your data disks and programs that you've written yourself. Using two drives it will copy a full disk in around 45 seconds and formats the destination disk automatically during the copy process.

The Nibble Copier is for copying disks having any one of a myriad protection schemes. This range of disks is referred to as "medium protected".

For "those really tough titles" the *128 Cannon* uses a list of "parameters" to enable you to make your legally allowed archival backup, a parameter being a little program that is specifically designed to defeat the protection on a nominated software title. For instance, if you purchased a program named *Super Mail* and want to make your safety backup before starting to use it, you'd first of all make a copy of the disk with either the Fast Copy or the Nibbler, then go back to the Main Menu of *128 Cannon* and choose Parameter Copier.

This prompts you to take the disk out and put it back in upside down as the various Parameters are on the back of the disk. You scroll through the list of 100 or so Parameters till you come to *Super Mail* then load it by pressing return.

Follow the prompts to put in your copy and the Parameter program will write the vital information to your copy to make it work. That's it!

There's a list of available Parameters in the manual, the majority of which are for C-64 programs, but there are several important C-128 programs listed too.

Kracker Jax release disks of new Parameters from time to time to use in conjunction with the *128 Cannon.* Similar programs are available for the C-64 also so you need never be without a backup of your vital software.

Let me say here that the software publishers are most concerned about the amount of piracy going on, alleging that this and similar programs are being used for that purpose. It's a very thorny subject, as I said at the start, but if you're a responsible computer user who only uses *128 Cannon* to make archive copies of personally owned software then you're not pirating the software. If you give away or sell copies of software then you

are pirating and denying the publishers and authors of the software income and profits.

As a working musician who's been involved in the recording industry I'd like to draw the comparison between a record album of a dozen songs which sells for around $14.

The 12 songs are all copyrighted and the respective authors must all be paid a royalty by the recording company, usually before the release of the album. The studio time (at around $150 per hour) needs to be paid "up front" and anything from 10 to 100 hours or more could be involved. The musicians and technicians need to be paid, as do the production costs, advertising and distribution costs. The initial outlay, as you can see, is quite large.

The software companies have their range of costs when producing a new program which admittedly may not sell on such a large scale as "pop" records do, although some of the game titles must have come fairly close. Most software sells for $30 upwards, with some business programs costing around $150 (*Superbase* and *Superscript 128* for example cost me $148 each). I've never understood software pricing when related to a similar consumer product like record albums and to have to pay an extra fee for a backup copy is sometimes a bit much.

Back again to the *128 Cannon*... When you boot up the *128 Cannon* you get a title screen showing a graphic representation of the front of a 1571 drive which dissolves into a menu of what's available on the entire disk. (Throughout *128 Cannon* the menus can only be described as "plain but very functional".)

Various copiers and utilities are selected by letter or Function Key, a nice touch, and it's here that you select the drive configuration you'll be using. I opted for the 1571 as a source disk and a 1541 as a destination disk. It worked well for me, with the only limitation being of course that I could only write single sided disks to the 1541. Had I used a 1571 as a destination drive I could have written to both sides.

There's a Help screen which tells exactly what features are available in the configuration you've chosen. You may return to the Main Menu or Reboot the disk from any feature in *128 Cannon*.

There's a really good Directory Editor on the disk which lets you sort, delete, re-arrange or otherwise modify a directory listing. Very handy for grouping various files together and for putting the Boot program at the top of the directory so that Shift & Run/Stop will load and run it. Also, if you've scratched and resaved many programs on a working disk you find that the directory is messed up with files from one programs mixed up with files from another and it's nice to be able to tidy them up with this Editor.

There's an Error & Density Checker which puts a display on screen showing the RAM of the disk in the form of Track and Sector display. If an error is found (some protection methods rely on deliberate errors) then it's shown in this display with a symbol, the keys to which are clearly shown in the manual. It's quite quick and works well.

In File Copy mode you also have an option to issue Disk Commands like Format, Validate, Scratch, Initialize etc and I found the Format to be quite quick.

The commercial @ sign is used as a prefix (it's put on the screen for you) and all I did to format a disk was follow it with N0:diskname,id (return). S0 to scratch a file, V0 to validate a disk, I0 to initialize a drive with a stuck head etc. (note that it's a zero & not letter O), all work OK.

My test of file copying consisted of 4 files of 68, 20, 53 and 55 blocks long all copied at the same time. Once selected, and using the 2 drives as above it took 55 seconds to read the files and 2 minutes 40 seconds to write them to the destination disk. It reads the files into memory before writing them to the copy disk. Not the fastest file copier but certainly quite respectable times.

The best utility on the disk for me was the excellent Disk Doctor, quite the best I've seen. It's display shows the data from the disk track and sector se lected with a display below it offering:-

N - Next Sector
@ - Change Byte
P - Previous Sector
R - Rewrite Sector
+/- Scan Fwd/Bkwd
T - Text Mode
J - Jump CRSR Link
D - Disk Commands
S - New Sector
H - Hunt Disk
C - Display a Chain
Q - Quit

Below this is shown the Value of the current byte in decimal and hex, eg '46 $2e' whilst the position of the byte is shown just below that. Over to the right of these two is a window which gives a readout of what the current byte means and various messages came up here saying things like "Bitmap for track # 35, * blocks free". The window also shows a number of *** corresponding to the number of blocks free. Other window messages included "EOR (I),Y" , "CMP(I), X" , "JSR" , "PEEK" etc so you can see that the display is a mixture of assembly opcodes and Basic keywords which are all very useful in knowing what's going on in that particular disk sector. The Hunt feature lets you search for a string on the disk and displays every sector as it's searching through it. This Disk Doctor is probably worth the cost of the disk alone and I found it very good.

In addition to using two drives for copying I tested out the single drive copiers and it was here that I had problems. Using a single drive involves swapping the source and destination disks when prompted and sometimes the process "hung up" for no apparent reason.

When I swapped disks and pressed Return nothing happened and I had to reboot the system to start again. A couple of times I had a similar problem when returning to the Main Menu. I've never been 100% happy about the drive in my 128D and it may well be that the drive is the cause of this particular problem. In any event it didn't happen using the two drive hookup so I'm still at a loss to understand it. It didn't make me unhappy about having bought the program (yes I did!) as it worked very well for me mostly and, as I say, the Disk Doctor alone would be worth the cost.

128 Cannon is available from Computer Mart, 2700 NE Anderesen St, Vancouver, WA 98661, USA. It costs US$39 (about AUST$55). ❑

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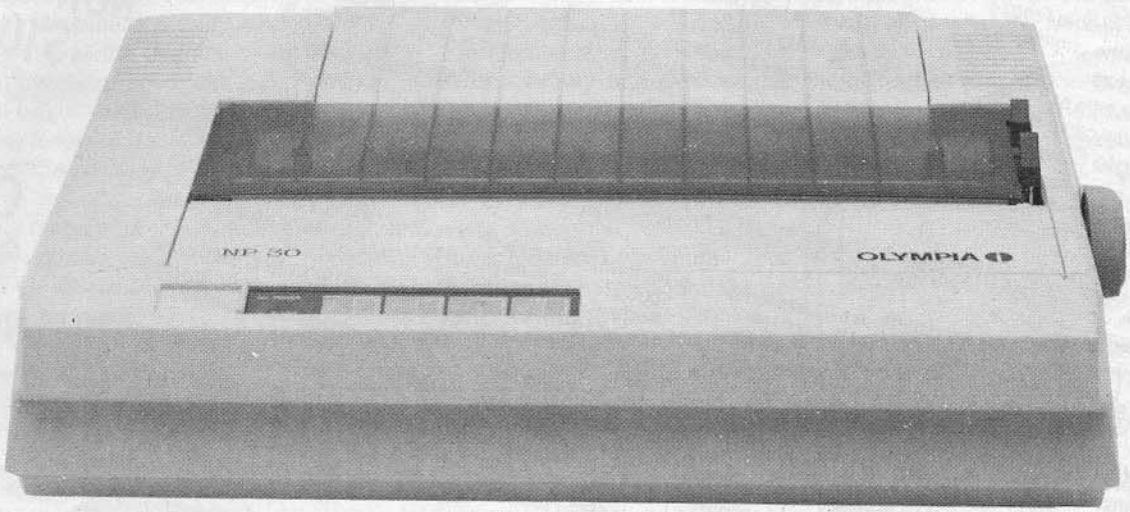

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(We have found this to be "unstoppable", it even preserves the tape buffer).

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Olympia NP30

Another Commodore compatible printer! How compatible, is the question we always ask. Andrew Farrell puts the latest offering to test.

THE Olympia NP30 looks quite at home next to the current greyish beige casing of a Commodore 128D. Having unpacked the printer, it is necessary to remove the usual collection of anti-slip devices including a rather tricky yellow tag just below the printhead.

The ribbon comes in the form of a small cartridge which sits immediately behind the printhead. A flat panel on the top front of the printer provides controls for select, line feed, form feed and near letter quality. The buttons have a positive feel and are attractively styled.

The operation manual is a rather awkward A4 size publication about the size of this magazine, only half as thick. I managed to find several typing mistakes in critical places such as the example program for demonstrating the various print modes. Mention is also made of necessary dip-switch settings. These are incorrect. Only switches five and six should be on, not switch eight as recommended.

The built-in tractor feed is semi-adjustable, making it a little awkward to use for labels or narrow stationery.

Switching on the printer produces a pip followed by a two tone warning that you are out of paper. This was a pleasant change from the normally grating high frequency beep let out by some printers.

Inserting paper is quite simple. Rather than the auto feed process employed by some printers, which is somewhat complicated and occasionally cumbersome, you simply position the paper behind the paper bail, then move the paper bail lever to the forward position. A further gentle push will cause the paper to feed through for as long as you hold down the lever. This allows you to position the paper as quickly and more easily than the auto feed method.

Issuing a self-test causes the version number, version date and current dip switch settings to be printed followed by the usual character set printout. By holding down the form feed button rather than the line feed button it is possible to view the same printout in near letter quality mode.

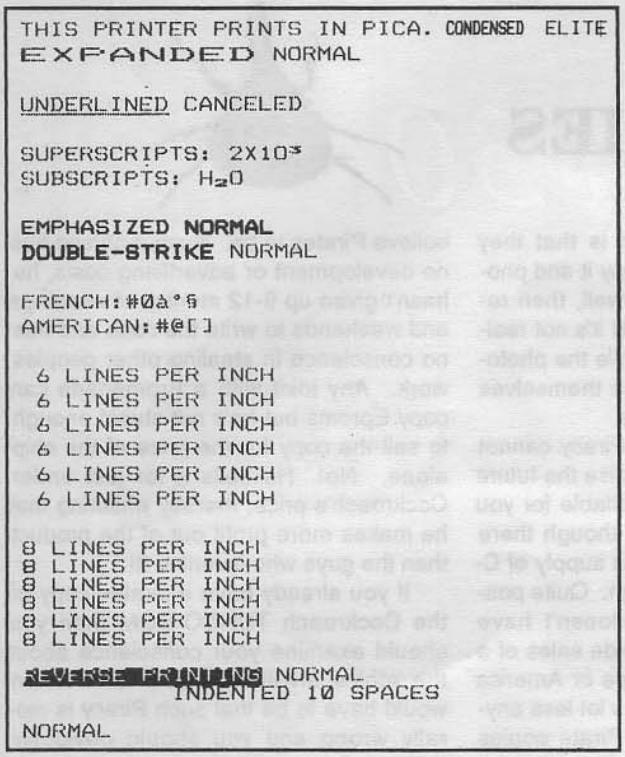
Just to the left of the operation panel a slide cover opens to reveal a set of dip switches. These control such functions as the paper end sensor, graphics mode, page length, device number and other assorted features. At the left hand rear of the unit a further panel can be removed to reveal the interface and four dip switches.

At long last we have a printer that need never be turned on its belly to have its Phillips screws removed and the dip switches adjusted.

On our review model the printer connects directly to the Commodore serial port by the usual serial cable. Unfortunately such a cable was not supplied with our unit, so I can only assume therefore that it is not a standard item.

In Commodore mode the printer is capable of printing in Pica, Elite, Condensed, Expanded and Underline. It will also handle Superscripts and Sub-

```
0 POKE53280,0:POKE53281,0
1 PRINT"■ PRINTER TEST!"
2 REM
3 REM MODIFIED BY ANDREW FARRELL
4 REM
10 OPEN 1,4
20 PRINT#1,"THIS PRINTER PRINTS IN";CHR$(15);" PICA.";
30 PRINT#1,CHR$(29);" CONDENSED ";CHR$(28);" ELITE"
40 PRINT#1,CHR$(15);CHR$(14);"EXPANDED";CHR$(129);" NORMAL"
50 PRINT#1," "
60 PRINT#1,CHR$(27);"C";"UNDERLINED";CHR$(27);"D";" CANCELED"
70 PRINT#1," "
80 PRINT#1,"SUPERSCRIPTS: 2X10";CHR$(27);"J";"3";CHR$(27);"K"
90 PRINT#1,"SUBSCRIPTS: H";CHR$(27);"L";"2";CHR$(27);"M";"O"
100 PRINT#1," "
110 PRINT#1,CHR$(27);"T";"EMPHASIZED";CHR$(27);"H"" NORMAL"
120 PRINT#1,CHR$(27);"H";"DOUBLE-STRIKE";CHR$(27);"I";" NORMAL"
130 PRINT#1," "
140 PRINT#1,CHR$(27);"!";CHR$(66);"FRENCH:#0@[]"
150 PRINT#1,CHR$(27);"!";CHR$(64);"AMERICAN:#@[]"
160 PRINT#1," "
170 FOR X=1 TO 6
180 PRINT#1," ";
190 PRINT#1,CHR$(27);"6";"6 LINES PER INCH"
200 NEXT X
210 PRINT#1," "
220 FOR X=1 TO 6
230 PRINT#1,CHR$(27);"8";"8 LINES PER INCH"
240 NEXT X
250 PRINT#1," "
260 PRINT#1,CHR$(18);"REVERSE PRINTING";
270 PRINT#1,CHR$(146);" NORMAL"
280 PRINT#1,CHR$(16);"10";"INDENTED 10 SPACES"
290 PRINT#1,CHR$(24)
300 PRINT#1,"NORMAL"
310 CLOSE1
```



scripts, Emphasized, Double Strike, Reverse Printing and up to 20 CPI. The manual explains how to access these features using a BASIC program, however as usual fails to give any real direction as to how to get these modes to work from your average word processor.

For some reason printer manufacturers feel sure that we should all be familiar with hexidecimal and thus include this often misunderstood number system throughout the manual.

Graphics are given some mention, so we put them to the test with several popular programs. *Printmaster* worked no hassle. I selected the MPS801 printer driver.

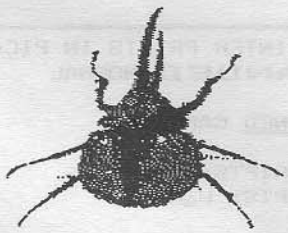
However, dip-switch three must be switched to the on position. The print quality was acceptable, and speed was sufficient.

In draft mode the NP-30 whizzes along at 130 characters per second, which is the accepted speed of today.

Conclusions

A solid printer with a positive feel to its controls and more than average print quality. Extra points for speed and ease of use. Olympia have built a practical printer that performs well. Ideal for home or small business. (Watch out for our complete printer comparison coming soon!) ❑

COCKROACH AN ENDANGERED SPECIES



THE cockroach has been around for millions of years and will probably be around long after most other forms of life on Earth have died out.

This hardy insect is in no danger of extinction but there is one species of cockroach found in Queensland, Australia, that is in danger of vanishing forever. We're talking about Cockroach Software, a computer software/firmware company that is in danger of becoming extinct due, not to insecticides, but to Piracy.

This company writes and manufactures "goodies" for the Commodore 64, and is one of the few Australian companies to write programs for this popular machine. The majority of software for the C-64 originates overseas and imported software is expensive. The importer, the distributor, the retailer and Mr Keating all need to make some money out of it, as does the original software supplier overseas.

Our miserable dollar exchange rate doesn't help things much either, but all these things make the local price much higher than the price you'll see advertised in the overseas magazines. This situation obviously makes an importer cautious about what he should bring in for us to buy and this is where the Pirates come in. The way they operate is to have contacts in USA or Europe with whom they swap "broken" software.

Usually, no money is involved and the system requires that they send something that the other guy doesn't have in exchange. These broken programs are then offered for sale by the Pirate businesses, invariably without instructions, usually for less than $10 with no guarantees and no instructions to help you learn to use the program.

You may say that this allows you to "sample" the program before buying an original, but retail sales would indicate otherwise. All too often dealers are left with much software decorating their shelves, with the result that they're reluctant to stock new software. Many dealers have been asked by "customers" if they can "try out" the software at home.

What they really mean is that they want to take it home and copy it and photocopy the instructions as well, then return the package saying that it's not really want they want! Meanwhile the photocopied instructions replicate themselves until they're hardly readable.

Any idea that software Piracy cannot harm the industry or jeopardise the future of good software being available for you should be dismissed even though there does seem to be an endless supply of C-64 programs coming through. Quite possibly Piracy in Australia doesn't have much effect on the world-wide sales of a product originating in Europe or America where the original sells for a lot less anyway and (possibly) fewer Pirate copies are sold, but it doesn't excuse the fact that program piracy is stealing.

Not much Australian software is (legally) distributed world-wide and in fact not many Australian companies write for the C-64. One that does is the aforementioned Cockroach Software, which has been in existence for three years and has produced a number of very successful packages for the C-64.

Despite their work and output, the proprietors haven't yet been able to give up their day jobs to concentrate full-time on C-64 software as there hasn't been sufficient profit (or reward for their efforts) due to Piracy of their programs.

Their most successful program without a doubt has been the Cockroach TURBO-ROM. Unfortunately, this is the one suffering most from Piracy.

Estimates regarding the number of illegal copies of the TURBO-ROM vary but even the very conservative estimate by Cockroach's own solicitor indicates that for every unit sold by the company, 10 pirated versions are sold. Your cooperation is invited to help stamp out these illegal suppliers who really are parasites preying on other (more talented?) people's work. There is a reward offered of $500 for information leading to the prosecution of anyone copying the CockroachTURBO-ROM.

We say "parasites" as that's what we believe Pirates to be. Such a person has no development or advertising costs, he hasn't given up 9-12 months of evenings and weekends to write the code and has no conscience in stealing other peoples work. Any idiot with a Promenade can copy Eproms but he's not stupid enough to sell the copy for the price of the chip alone. No! He sells it for just under Cockroach's price, thereby ensuring that he makes more profit out of the product than the guys who invented it!

If you already have a pirated copy of the Cockroach TURBO-ROM then you should examine your conscience about the ethics involved. Your conclusion would have to be that such Piracy is morally wrong and you should obviously then send a donation to the guys at Cockroach to compensate for their loss of income.

There is good software/firmware in the Cockroach pipeline right now but it's in danger of being shelved and forgotten unless this PIRACY of Australian products can be curbed. Quite frankly, the Australian Cockroach is facing extinction over this issue, they just can't go on lining the pockets of these bloodsuckers any longer and could depart these shores for the USA where the huge population and bigger sales/lower prices ensure some financial rewards before the Pirates take over.

Whilst not condoning piracy of imported software, we can see that a pirated copy of a program either not yet available or very expensive might be tempting, but in the long run it'll be you the user who'll be deprived of good software as programmers will stop writing for the machine. This is happening right now for the Amiga.

We thought you'd like to know how it feels to be facing extinction and we're very serious when we say all this, but the saving grace might just be the famed Australian practice of "fair go".

That's all we ask, give Australian software producers a fair go. ❑

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Cholo

by Tony Smith

The other day I was at my favourite software shop, drooling over the Amiga software when I spotted Cholo.

AS THERE is no way that I'll be getting an Amiga in the foreseeable future, this recent arrival in the ranks of 64 software looked pretty good.

I offered to mention my favourite salesman's name in my review of *Cholo* if he could see his way clear to offer some sort of discount, casually dropped the names of Australia's best selling computer magazines, *Australian Commodore Review and Home Computer GEM* of course and promptly received my copy of *Cholo* at a good deal less than face cost. (The Editor's comments about reviewer's perks are starting to come true!!) Thanks Terry, may your superiors go the way of the Texas T199 computer.

The scenario for *Cholo* is the far future. Upon reading the book enclosed with the disk you find that there has been a nuclear holocaust and the surface of the earth had been rendered uninhabitable by radiation. The population lives in sealed bunkers and the city above is deserted except for self-maintaining robots.

The most popular computer simulation in the bunkers is a game where you control a robot on the surface and seek to explore the empty city. Because you are the best player of the game, you have been chosen to be told the truth. In fact the city is now free of dangerous radiation and has been so for two hundred years! The remaining robots will not unseal the bunkers, so it is your job to do it and thus be the saviour of the human race (wow!).

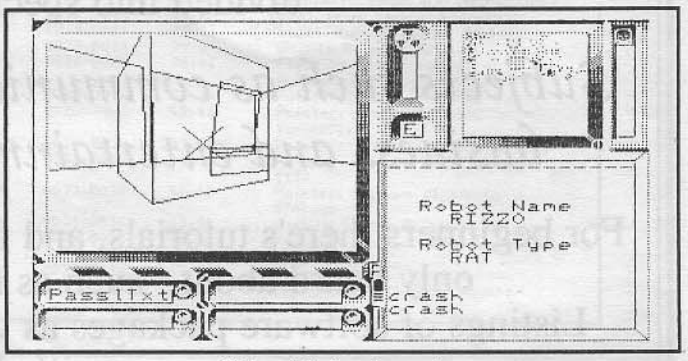
Contact with the surface is through the camera eyes of remote controlled robots just like in the game. You have the ability to log-on to other robots and if you know the password, you can read and write programs to them. This can be handy - when you log-on and the robot has a power such as radar, you can download it and then you have radar too (sounds a bit like pirating to me).

Unfortunately, no-one knows how to break the seal on the bunkers' external exit and the last fifteen people who have tried have failed.

Of course, now that you know this terrible secret you will not be allowed back into the city in case you tell anyone that it is safe on the surface and cause a panic.

On top of all that, the girl you love is inside and in order to ever see her again you must accomplish this mission and release the race from its self-imposed prison. This is quite a task, as anyone who buys the game and tries it will find out.

The update on the graphics is a bit slow, but if you take your time and don't lose orientation you will find your way around quite easily. The robot guards are a handful, they are also quite dumb and not really worth logging onto. Outside the first building is a hacker robot. (sounds like my mate Bob). If you paralyze him with your blaster you can change places with him and get up to all sorts of mischief.

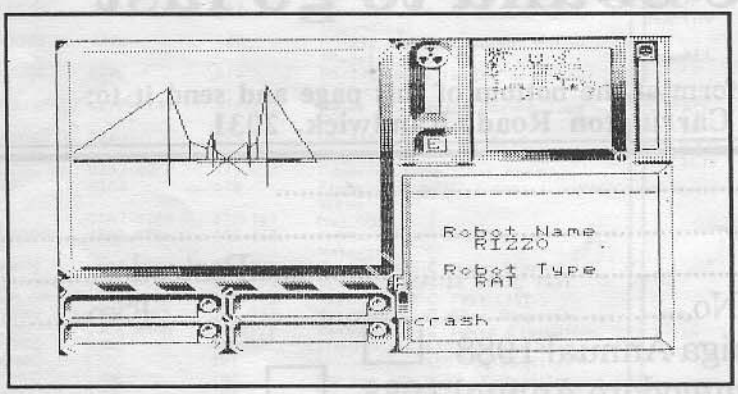


Cyber 1 in headquarters.

There are other robots too, which can be taken over. One is a flying eye robot which takes some catching but is worth it even if just for the view.

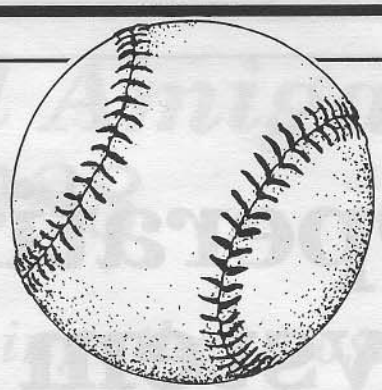
The city is made up of vector buildings rather like *Mercenary,* some with doorways which you can enter and explore, others with no apparent entries. There is a lot of exploring to do and it will take a considerable time to get to the bottom of this game, especially the way I keep getting killed.

A map of pre-war *Cholo* is supplied with the game but as it is a couple of hundred years old it may not be up to date. The screen shows a view of the map in the top right corner except when you are in radar mode when it is replaced by a larger scale view of your local area. ❑



The local bridge.

Hardball



by Darren Brown

MOST of us have never been to a real baseball game, and probably never will, as the game isn't that popular over here in Australia, but for the Americans, baseball is a weekly event. You'll find them lining up to get into the ballpark, buying hotdogs and other souvenirs to get them through this major social event of the week.

If you have ever played baseball at school or for a local club you will have some idea of what a major game is like. The spectators watching every move you make and you know if you make a mistake, it could mean the game. Well, the computer version is exactly the same.

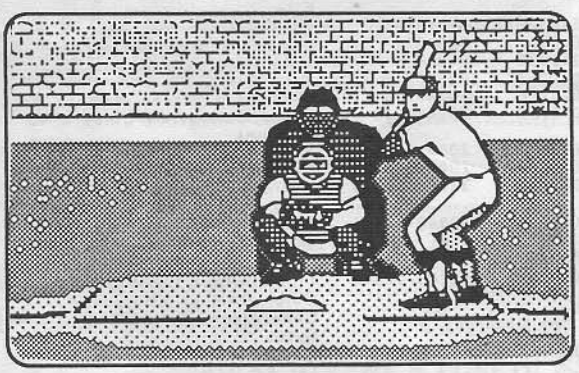
This new release from Ozisoft for the Amiga has just been converted from the C64 version under the same name. The game focuses on major league baseball teams that play it out against each other and when you start, there is no getting away from your computer for at least an hour or more.

There have been a few sport simulators around and none have come near to this. *Hardball* is so realistic that I found it incredibly hard to even get anywhere in the game. Fielding is the easy part as you have control of your fielders with the joystick and when you get the ball, throwing to base is as easy as moving your joystick or mouse in the direction of the base. Pitching is also very easy as depending on the pitcher you have chosen, he will have different qualities and different pitches. You can select from FOUR different pitches that each pitcher might have.

There are Fastballs, Change-ups, Offspeeds, Curve balls, Screwballs, Sinkers and Sliders. Each one of these moves the ball in a direction toward the batter. You can also select the direction that you want to the ball to travel. Whether it be up, down, left, right or straight down the centre, you must either try to strike the batter out, or throw balls that are hard for him to hit.

Now after you get three of the other side out, its time for you to bat and this is no easy task. In fact, after playing the game for over two hours, I still couldn't get my batting perfected. The only hits that I ever got, were fouls, so they didn't really count. But if you do manage to get a good hit after a bit of practice, you have full control of the men on the bases. You can steal a base while the pitcher isn't looking or you can sneak in a home run. Usually the computer will get you, but if you have a human opponent, you can usually get away with it.

After each pitch or hit, a manager's screen is displayed. Here you can change the pitcher or any one of the fielders with one of your reserves. But be warned, once you change a man off the field, you can't bring him back on. I made this mistake and totally ruined my chances for winning. You can change the position of the fielders depending on the next batter. This comes in handy as if you come across a left handed batter, you can move your fielders so that they are ready for the ball.



Conclusion

If you find you actually enjoy trying to work out all that complex information on how to play, you will be surprised that the graphics are quite good, as it should be on the Amiga. The animation of the pitcher and the batter is about as close to a real cartoon as a home computer could possibly get. But, the game isn't complete without some digitised sound of the roar of the crowd, that is only disrupted every now and again by some typical ballpark music that usually puts off your concentration just enough to wreck your pitcher bat.

I am not really one for sport games, myself, but a lot of you readers are. The one drawback with this particular game is that the whole game takes about an hour or even longer depending on how quickly you bat and pitch. The throwing of the ball could have been speeded up a bit, but then again, that wouldn't allow the game to be so realistic in the play.

Overall, I found the game interesting for about the first 20 minutes, but after some of the repetitive moves that happen, you could get bored quickly.

Sport seems to be a good break from all those shoot-em-ups that are around. The only problem is that for some people sport doesn't offer enough action. You might be inclined to disagree with me, but that is just my opinion.

Otherwise I think there are a few people out there that will really enjoy this, and if you are one of those, go out and buy it, because otherwise you will be missing out on one of the most realistic sport games yet. ❑

HARDBALL

Publisher	Accolade
Distributor	OziSoft
Machine	Amiga
Price	$69.95
Graphics	96
Sound	94
Music	73
Documentation	87
Overall	**90**

Operating System Memory Map

Label	Hex. Addr.	Decimal Loc.	Description
OLDTXT	003D-003E	61-62	Pointer: BASIC Statement for CONT
DATLIN	003F-0040	63-64	Current DATA Line Number
DATPTR	0041-0042	65-66	Pointer: Current DATA Item Address
INPPTR	0043-0044	67-68	Vector: INPUT Routine
VARNAM	0045-0046	69-70	Current BASIC Variable Name
VARPNT	0047-0048	71-72	Pointer: Current BASIC Variable Data
FORPNT	0049-004A	73-74	Pointer: Index Variable for FOR/NEXT
	004B-0060	75-96	Temp Pointer/Data Area
FACEXP	0061	97	Floating-Point Accumulator #1: Exponent
FACHO	0062-0065	98-101	Floating Accum. #1: Mantissa
FACSGN	0066	102	Floating Accum. #1: Sign
SGNFLG	0067	103	Pointer: Series Evaluation Constant
BITS	0068	104	Floating Accum. #1: Overflow Digit
ARGEXP	0069	105	Floating-Point Accumulator #2: Exponent
ARGHO	006A-006D	106-109	Floating Accum. #2: Mantissa
ARGSGN	006E	110	Floating Accum. #2: Sign
ARISGN	006F	111	Sign Comparison Result: Accum. #1 vs #2
FACOV	0070	112	Floating Accum. #1. Low-Order (Rounding)
RODBS	029D	669	RS-232 Start of Output Buffer (Page)
RODBE	029E	670	RS-232 Index to End of Output Buffer
IRQTMP	029F-02A0	671-672	Holds IRQ Vector During Tape I/O
ENABL	02A1	673	RS-232 Current Enabled Interrupts
	02A2-02FF	674-677	Cassette Temp Data Area
	02A6	678	Flag: 0 = NTSC Video 1 = PAL Video
	02A7-02FF	679-767	Not Used
IERROR	0300-0301	768-769	Vector: Print BASIC Error Message
IMAIN	0302-0303	770-771	Vector: BASIC Warm Start
ICRNCH	0304-0305	772-773	Vector: Tokenize BASIC Text
IQPLOP	0306-0307	774-775	Vector: BASIC Text LIST
IGONE	0308-0309	776-777	Vector: BASIC Char Dispatch
IEVAL	030A-030B	778-779	Vector: BASIC Token Evaluation
SAREG	030C	780	Storage for 6502 .A Register
SXREG	030D	781	Storage for 6502 .X Register
SYREG	030E	782	Storage for 6502 .Y Register
SPREG	030F	783	Storage for 6502 .SP Register
USRPOK	0310-0313	784-787	USR Function Jump Instr ($4c)
USRADD	0314-0315	785-786	USR Function Jump Address

Label	Hex. Addr.	Dec. Loc.	Description
D6510	0000	0	6510 On-Chip Data-Direction Register
R6510	0001	1	6510 On-Chip 8-Bit Input/Output Register
	0002	2	Do Not Use
ADRAY1	0003-0004	3-4	Jump Vector: Convert Floating - Integer
ADRAY2	0005-0006	5-6	Jump Vector: Convert Integer - Floating
CHARAC	0007	7	Search Character
ENDCHR	0008	8	Flag: Scan for Quote at End of String
TRMPOS	0009	9	Screen Column From Last TAB
VERCK	000A	10	Flag: 0 = Load 1 = Verify
COUNT	000B	11	Input Buffer Pointer/Number of Subscripts
DIMFLG	000C	12	Flag: Default Array Dimension
VALTYP	000D	13	Data Type: $ff = String $00 = Numeric
INTFLG	000E	14	Data Type: $80 = Integer $00 = Floating
GARBFL	000F	15	Flag: DATA scan/LIST quote/Garbage Collect
SUBFLG	0010	16	Flag: Subscript Ref/User Function Call
INPFLG	0011	17	Flag: $00 = INPUT $40 = GET $98 = READ
TANSGN	0012	18	Flag: TAN sign/Comparison Result
	0013	19	Flag: INPUT Prompt
LINNUM	0014-0015	20-21	Temp: Integer Value
TEMPPT	0016	22	Pointer: Temporary String Stack
LASTPT	0017-0018	23-24	Last Temp String Address
TEMPST	0019-0021	25-33	Stack for Temporary Strings
INDEX	0022-0025	34-37	Utility Pointer Area
RESHO	0026-002A	38-42	Floating-Point Product of Multiply.
TXTTAB	002B-002C	43-44	Pointer: Start of BASIC Text
VARTAB	002D-002E	45-46	Pointer: Start of BASIC Variables
ARYTAB	002F-0030	47-48	Pointer: Start of BASIC Arrays
STREND	0031-0032	49-50	Pointer: End of BASIC Arrays (+1)
FRETOP	0033-0034	51-52	Pointer: Bottom of String Storage
FRESPC	0035-0036	53-54	Utility String Pointer
MEMSIZ	0037-0038	55-56	Pointer: Highest Address Used by BASIC
CURLIN	0039-003A	57-58	Current BASIC Line Number
OLDLIN	003B-003C	59-60	Previous BASIC Line Number

Label	Hex. Addr.	Decimal Loc.	Description
CINV	0314-0315	788-789	Vector: Hardware IRQ Interrupt
CBINV	0316-0317	790-791	Vector: BRK Instr. Interrupt
NMINV	0318-0319	792-793	Vector: Non-Maskable Interrupt
IOPEN	031A-031B	794-795	Open a Logical File
ICLOSE	031C-031D	796-797	Close a Specified Logical File
ICHKIN	031E-031F	798-799	Kernal CHKIN Routine Vector
ICKOUT	0320-0321	800-801	Open Channel for Output
ICLRCH	0322-0323	802-803	Close Input and Output Channels
IBASIN	0324-0325	804-805	Kernal CHRIN Routine Vector
IBSOUT	0326-0327	806-807	Kernal CHROUT Routine Vector
ISTOP	0328-0329	808-809	Scan Stop Key
IGETIN	032A-032B	810-811	Get Character from Keyboard Queue (Keyboard Buffer)
ICLALL	032C-032D	812-813	Close a Specified Logical File
USRCMD	032E-032F	814-815	User-Defined Vector
ILOAD	0330-0331	816-817	Load RAM from a Device
ISAVE	0332-0333	818-819	Save RAM to a Device
TBUFFR	033C-03FB	828-1019	Tape I/O Buffer
VICSCN	0400-07FF	1024-2047	1024 Byte Screen Memory Area
	0400-07E7	1024-2023	Video Matrix: 25 Lines x 40 Columns
	07F8-07FF	2040-2047	Sprite Data Pointers
	0800-9FFF	2048-40959	Normal BASIC Program Space
	8000-9FFF	32768-40959	Optional Cartridge ROM - 8192 Bytes
	A000-BFFF	40960-49151	BASIC ROM - 8192 Bytes (or 8K RAM)
	C000-CFFF	49152-53247	RAM - 4096 Bytes
	D000-DFFF	53248-57343	Input/Output Devices and Color RAM or Character Generator ROM or RAM - 4096 Bytes
	E000-FFFF	57344-65535	Kernal ROM - 8192 Bytes (or 8K RAM)

TWO - This secondary address allows you to program a format into the printer's memory to be used by secondary address number one. There are three types of format available:

The NUMERIC format allows printing of numbers as amounts of money, with zeros in front, and with the sign (+/-). There are 6 different characters used for defining a numeric format. They are:-

9 - Tells the printer to print a digit of a number here. If there is no character to print, a space is left.

Z - This character also tells the printer to print a digit. But if there is no digit to print, a zero will be printed.

$ - If one $ is sent, the number is treated like an amount of money, and the is not justified. If all the characters left of the decimal point are filled with a $, the number will be justified around the decimal point: ie, a row of decimal points will appear down the page, regardless of the number.

S - Prints the sign of the number (+/-) in front of the number

. - Defines where the decimal point goes and actually prints.

- - Prints the sign of a number, but only if the number is negative.

The ALPHA (string data) field (as Commodore puts it) defines where characters will be printed and which characters will be printed in a specific string.

The only character the printer recognises in this form of format is the letter A. Examples of this and all other secondary address functions are included in Table 2.

The last form of data format is the use of BLANKS (spaces) to define columns. Again, more explanation is provided in Figure 1.

If you wish to print characters in every field, put a reverse character in front of the character you wish printed.

THREE - The third secondary address allows you to set the number of lines per page. This is convenient for when you have non-standard fan-fold paper and you wish to use the paging feature. The default is 66 lines, including 3 at the top of the form and three at the bottom which are blank.

If you wish to change this to

50,OPEN3,4,3:PRINT#3,CHR$(50)

etc.

FOUR - Error messages are enabled when this secondary address is sent. A list of errors and what they mean appears in Table 1.

These error messages are somewhat more explanatory than they at first seem, because the printer prints the string it doesn't like; on the next line, an arrow pointing to the problem; the error message, which just happens to be totally meaningless to all and sundry - you have to look it up on a table.

TABLE 1: 802 Error Messages

PE:L Lines per page out of range. You tried to set the lines per page less than 13 or larger than 128.

PE:C You gave the printer a secondary address out of range

PE:M Data-format mismatch. You gave the printer the wrong data type for that field. The first character printed after the error message is the offender.

PE:E The exponent you gave the printer is wrong. The correct format is n.nnnn+ee or n.nnnn-ee.

PE:F Bad format (equals syntax error)

PE:T You sent a new secondary address before a CHR$(13) or CHR$(10)

FIVE - This secondary address allows High Resolution Graphics. What is actually does is define a character for later use.

A character may be defined by sending the ASCII equivalents of the numbers. If you've ever designed your own character sets, you'll understand what has to be done. The only drawback is that the 802 uses a different grid for defining the characters.

This is shown in Figure 2.

SIX - Secondary address six sets the spacing between lines. Generally, a value of 21 produces no space at all between lines, and this is the value we will use later on when we look at high resolution graphics. The default as is in the manual (page 25, line 4) is a mis-print, and should read, "The default value is 38.."

SEVEN - When you are typing away within the realm of your wordprocessor, and you tell it to dump your masterpiece of prose or verse to the lazy bomb at the end of the serial cord, it opens a file with a secondary address of 7. This tells your 802 to print all unshifted characters in lowercase. Sensible? Maybe not as this is not the default.

EIGHT - In the original versions of the 1526/802, this secondary address was used to switch to uppercase mode. On later versions, however, this was dropped. So if you have a newer 1526/802 on your desk, secondary address number eight won't do a thing, but if you have a very early version, sending a secondary address of eight will cause your printer to go into uppercase mode.

NINE - This is used to turn off the printer's error messages.

TEN - This performs a complete reset, like an SYS64738 on a '64.

Figure 1 shows the output of 11 different programs. These programs show almost all of what the MPS-802 is capable of.

The first program utilizes the control codes. It is fairly self-explanatory, and, as I am running out of space I will not describe it in detail.

Programs two to six show examples of formatting your data. These programs should be reasonably easy to decipher if you use the explanations above.

Program seven cannot produce visible output in this magazine, so you will have to try it out. Don't forget, this program will be virtually useless if you forget to turn paging on.

Program eight is the basis of hires dumps, which will be explained later. The last two programs cause the printer to print the lines with no spaces in between them, and set the printer in lowercase mode, which is what most word processors use.

Figure 2 is an example of how to design your own graphics for the 802.

Simply design your graphic, add up the columns and send the CHR$'s of the numbers produced to the printer in a file opened with a secondary address of 5. Then use a file with no secondary address to send a CHR$(254) and voila! one design-it yourself graphic.

Figure 1

```
HERE ARE SOME EXAMPLES OF CONTROL CODES AT WORK:
CHR$(14)
CHR$(15)
lowercase - chr$(17)
REVERSE - CHR$(18)
UPPERCASE - CHR$(145)
REVERSE OFF - CHR$(146)
NOW LET'S HAVE A LOOK AT THE SECONDARY ADDRESSES
      123.45
     $123.45
    -$123.45
    +$123.45
    00123.45-
    12345.67
HOW ABOUT THIS              FOR FORMATTING


HOW ABOUT THIS FOR AN ERROR
+
*RE:S*
HITHERE
HI (OR GIDDAY)!
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING
LINE SPACING


this line is in lowercase.
```

High Resolution Dumps

There are four main guidelines for hires dumps. They are:-

1. Rotate the character to be printed

2. Define this character using the fifth secondary address.

3. Print the desired number of spaces,CHR$(254)CHR$(141) to print the defined character and perform a carriage return.

4. Never print a CHR$(13): ie: always place a ';' at the end of every print statement.

Let's examine the a portion of the program that appeared in *The Australian Commodore Review* in January of this year, page 45, "802 Newsroom".

The main routine we will look at is lines 30-80. But before we do this, the program in line 630 does an SYS49251. This performs the rotation that is necessary to the entire screen.

30FORI=7TO0STEP1:A=PEEK(J+I):A$=A$+CHR$(A):NEXT

This line collects the data from the screen and puts it in A$, ready for output to the printer. J is the base address for the screen.

40 PRINT#5,A$

File#5 has a secondary address of 5, which allows transfer of programmable characters. Line 40 transmits the data from the screen to the 802.

50 A$=""

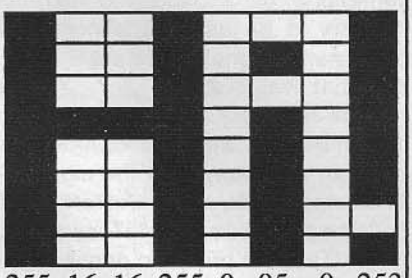
Resets A$ back to nothing.

60 B$=B$+CHR$(32)

B$ holds the spaces we need to ensure we don't print over the characters already printed. Line 60 adds a space to B$.

70PRINT#4,BCHR(254)CHR$(141); This is the moment of truth, the moment the printer receives the signal to dump what it has in its greedy little memory cells on to the paper. But first we print B$, the spaces collected so far for that line. Next CHR$(254) tells the printer to print the defined character and CHR$(141) does a carriage return, allowing the printer to receive another programmable character.

Figure 2



255 16 16 255 0 95 0 253

Totals to be downloaded to MPS-802

This is important, as the 802 WILL NOT allow more than two programmable characters on the one line. But if we tell it, 'You're on the next line now,' and don't move the paper, we can get around this hazard.

75 J=J+8:V=V+1

I'm good at picking obscure variable names, but bear with me anyway. In this line, J, the screen location, is incremented to the next character, and the number of characters to the line is incremented.

77IFV=29THENV=0:FI=FI+1:J=J+88:B$=N$:PRINT#4,CHR$(10)CHR$(141);

What a mouthful!

Line 77 starts by testing if we've printed enough characters for that line. If we have (*Newsroom* panels are only 29 characters wide), we increment the number of lines printed (FI), set the pointer to the screen memory to the next line (J), reset the number of spaces to be printed (B$) to the original number asked for (N$) and finally tell the printer to move to the next line.

78 IFFI=21THEN90

This line checks to see if enough lines have been printed (21 for *Newsroom* panels). If yes, finish. If no, continue.

80 GOTO27

This is an error on my part, as line 27 is actually a rem statement, and you should NEVER go to a rem statement.

Anyway, I hope you understand your MPS-802 (or any other printer with similar commands) a bit more, and have fun experimenting with it! ❑

Tape Rename

by Garryck D.Osborne

Description : Read/Modify a tape header, allowing programs to be renamed.

HAVE you ever gone to do some unusual job on your computer, or decided that it was about time that you got your program and data files in order? You probably were well into it before you found that it got very involved, and that you needed to keep lots of notes on scraps of paper so that you didn't get mixed up. "There should be a program to do all this and take care of these details." you said.

So you checked around and found that there wasn't a program to do what you had in mind. Then you wished that you knew how to write a program yourself that could do the job. "But that needs machine language, and you have to be an expert to know what you're doing with that stuff," all your friends said. NOT TRUE!

You do need to be prepared to learn, and a couple of reference books are needed, but there are plenty of small routines you could write without much difficulty.

And that's where this article comes in.

In this and subsequent articles I plan to bring you some useful utilities, show you how they were written (and why in that way), and demonstrate how easy it is to write your own.

This utility came about because when I bought my disk drive I only transferred about 3/4 of the programs I had typed to disk. Recently I decided it was time I copied the rest of my files also. I wanted to rename some of them, and the copy utility I was using didn't permit this. No problem, as ALF would say. Renaming files on a disk is a snap, all you do is use the rename command.

Then it hit me. If I had wanted to rename a file on tape, I would need to LOAD the file (possibly up to 20 minutes for a 35K data file, or 10 minutes for a long program), rewind the tape, and then SAVE it under the new name (up to 20 more minutes). If I was cautious I would have to put it on another tape first in case something went wrong during the SAVE. A thousand blessings on the person who invented the disk drive!

As it happens, there are still quite a few of you out there who use tapes. (Beats me why!) So for all you unfortunate people, I decided to write this program. With it you can read and examine any file header, change the name and other data in the header, and write the new information back onto the same spot on the tape (saving yourself up to 40 minutes in the process!)

If you were very brave you could even modify the header on a commercial program, because this utility will put back (and won't allow you to alter) the special machine language routines sometimes hidden in tape headers for copy protection.

And so, ON WITH THE PROGRAM!

After having set up our screen the way we like it (I like it anyway, you can do whatever you like) we read all the data making up the two machine language routines into a safe part of memory. (By safe I mean that our BASIC program won't interfere with it.) There are several places in the 64's memory where you can put short M.L. routines. VERY short routines can go in the bottom end of the STACK (locations 320-511) but if you have a lot of nested GOSUB's or FOR-NEXT loops your routine may be over-written during your BASIC program's operation.

There's a space from 679 to 767 reserved for sprite 11 which I have used for this program. If more room was needed you could use the tape buffer (828-1019) but any tape operation (such as this program) would destroy your routine.

Should you need LOTS of room, try the area from 49152 to 53247, which is protected from BASIC programs.

You will notice that throughout this article I will avoid the use of hexadecimal numbers. I prefer them actually but to make things a little easier for those of you who aren't used to them yet they'll be introduced gradually.

Line 70 clears out anything which may be in the tape buffer and we then display our messages and wait for the user to indicate they're ready to proceed.

Once we have our response we SYS to a routine which is built into the 64's operating system. This is a routine which simply reads the next block (be it header, program, or data) off the tape. Now we have the header stored in the cassette buffer.

Line 130 WAITs for the user to press stop by checking for bit 4 of location 1 to be set to 1. This won't happen until the stop key is pressed. WAIT is a very useful command which is not used as often as it could be. Definitely worth reading up on.

Now we need to get the tape back to EXACTLY the same point that the header was originally recorded on.

The tape counter proved to be very unreliable. Not only does the speed the numbers turn at vary from one datasette to another, but the counter also turns at different rates depending on whether you are at the start, middle or end of a tape, even though the tape is turning at a constant speed.Timing a fast-forward or rewind will not work because the speed of

This program is on the new Commodore Disk Magazine No. 8, see advertisement page 35, or you can send a stamped self addressed envelope for a copy of it.

this also varies depending on whether you're at the start, middle, or end of the tape. The only time tape speed is constant is when the PLAY button is pressed. So we have to turn the tape over and carefully control the length of time the PLAY button will work. We can control the motor from the computer so this should work well.

When the tape is at the right spot we turn it over again and we're ready to roll! I wrote the first machine language routine to accomplish this. Let's examine how it works.

This is a disassembly of that routine. It only uses nine different types of command so it's not hard to understand. If you already understand M.L. bear with me please, you could probably explain this better than me but I want to show that machine language is not really harder than BASIC, just a little more involved. (All numbers down the left hand side refer to memory locations.)

679 JSR 63534 :

Jump to SubRoutine (like GOSUB) at 63534, to the 64's built in routine to test if a tape key has been pressed.

682 BEQ 679 :

Branch if result EQual to zero. This checks the processors:ZERO FLAG.

If this is zero the key has not been pressed,:so we Branch back to 679 and try again.

684 LDA #127:

If the ZERO FLAG is set to 1 the BEQ is ignored and we then LoaD Accumulator (the processors main arithmetic register) with the value following (this is what the # means, it's called IMMEDIATE mode) - in this case with the value 127.

686 AND 56335 :

Perform a logical AND between the value in the accumulator and the value in 56335. The result is stored back in the :accumulator. The value 127 is called a MASK, we use it so that only bit 7 of the value we read from 56335 is zeroed.

689 STA 56335:

STore the value in the Accumulator in 56335. In effect what we have done is set bit 7 of location 56335 equal to zero :which tells the COMPLEX INTERFACE ADAPTER no. 1 that we want to set the time on its Time Of Day clock. The TOD clock is:very useful because tape and disk operations don't disturb it the way they do the 64's JIFFY clock (the clock BASIC uses).

692 LDA #0:

LoaD Accumulator in immediate (#) mode with the value 0.

694 STA 56329 :

STore Accumulator's value (0) in location 56329. This sets the TOD's seconds register to zero.

697 STA 56328 :

STore Accumulator's value (it hasn't changed, because we haven't told it to!) in the TOD's 1/10 of seconds register. (The clock now continues running from its new time.)

700 LDA 56329 :

LoaD Accumulator (no # this time, it's called ABSOLUTE mode) with the value in 56329. (Like reading a variable, the value in 56329 is not affected.) We want to see how far the TOD has counted.

703 CMP #20 :

CoMPare value in accumulator with value immediately (#) following (20). This is B.C.D. (Binary Coded Decimal) for the number 14. So we want to see if our TOD has counted 14 seconds yet.

705 BNE 700 :

Branch if Not Equal to zero. When the value read from 56329 is the same as our CoMPare, the zero flag is set to zero. If it is not zero, we go back to 700 and check again.

707 LDA 56328 :

Yes! We have reached 14 seconds so now we LoaD Accumulator with the value in 56328 to check the tenths of seconds.

710 CMP #3 :

CoMPare accumulator with the value 3 (B.C.D. for number 3!).

712 BNE 707 :

If we're not up to three tenths of a second go back to 707 and check value again.

714 LDA #1 :

Yes, total time elapsed is now 14 and 3/10's seconds. The tape is in the right spot so LoaD Accumulator with the value 1 (We will use this to tell the computer that the motor is going.)

716 STA 192 :

STore Accumulator's value in location 192 (cassette motor flag).

718 LDA 1 :

LoaD Accumulator with value from (no # this time) location1. (Location 1 controls lots of things so we must be careful not to upset the other bits in it or we could lock up the 64. So first we find out what the present value is.)

720 ORA #32 :

Perform logical OR on value in Accumulator with the value 32.This leaves all bits the same except bit 5 which is set to 1.The new value is left in the accumulator.

722 STA 1 :

STore Accumulator's value in location 1. The operating system sees that bit 5 is set and turns off the tape motor!

724 RTS :

ReTurn from Subroutine. We're all finished so we go back to our BASIC program right where we left off. (This works just the same as a RETURN from a GOSUB in BASIC does.)

There! Not too hard, eh? And that was the more complex of the two routines we use. You should now know (or know of) nine machine language commands.

As you saw, most of them can be used in more than one way. The different versions of the same command have different numbers so the 6510 microprocessor (to use its full name) knows which one it's meant to do.

If you go through the disassembly again with the help of the "Commodore 64 Programmers Reference Guide" and, if you have it, *Compute!'s* "Programming the Commodore 64", which has excellent memory maps and explanations, you will be well on the way to understanding and using M.L. in your own routines. And the only way to become good at something is to practice as much as possible. Also, these books show how to use the 64's built in routines in your programs, (like in the example above). These can make M.L. programming MUCH easier.

Having stopped the tape at the correct point we resume our program at line 180, making sure that the stop button is pressed and the tape turned over again.

Line 200 waits for the user to signal that they are ready to continue. NOW, (line 220) let's take a look at that header in the cassette buffer. The first byte (828) contains the header type. Lines 270 - 320 detail the various types. We read this number into a variable (A) so that we can manipulate it in any way we wish. The next two bytes tell us what the starting address of the program was (and will be if the header type is 3 or we specify a ,1,1 type LOAD). Bytes four and five

give us the end address (from which we could work out exactly how long the program is). These addresses are stored as two hexadecimal numbers in what is called LOW BYTE - HIGH BYTE format.

If you wish to learn about this kind of numbering, the Programmers Reference Guide explains M.L., hexadecimal, and a couple of M.L. instructions on pages 210 - 218 and low byte/high byte on page 219.

Having read all these into variables line 250 reads the next 16 bytes which contain our program name (if it has one). The rest of the buffer is blank or may contain M.L. instructions which must be in the tape buffer when it RUNs or else the program will crash. (In a normal SAVE the rest of the buffer is blanked out. This is why LOADing a commercial program and then SAVEing it sometimes won't work. The necessary M.L. is no longer there.)

In any case, if it's there we don't want to disturb it so the program does not allow you to alter any of the other 187 bytes in the buffer.

Now we display the header type (lines 260 - 330) and ask if the user wishes to change it. The main uses would likely be to force a LOAD to a specific area of memory or make it relocatable in order to easily examine the program with a monitor (e.g. an AUTOBOOTING (self-starting) program).

If the user wants to change it we ask for a new header type, make sure the value is legal (between 1 and 5, and a whole number) in line 380, and place the new value in the correct place in the cassette buffer.

Continuing on, line 400 converts low byte/high byte to a single decimal number, and we display the start and end addresses (lines 410 - 440). If the user wants to change the LOAD address we ask for a new start address, calculate the new end address, and if this would cause the end of the program to go into ZERO PAGE (which would cause the 64 to go haywire) we inform the user, pause to give them time to read the message (FOR-NEXT loop in line 520), and go back to line 410 to get a new start address. It is possible you may want to LOAD to PAGE 3 (this is how autoboots often work) but you may like to add a check to ensure the start address is not lower

than 512 (start of PAGE 2). I have not done this in order to leave the program as flexible as possible (also called laziness).

If all is O.K. lines 490 and 530 convert the decimal addresses to lo/hi byte and line 540 POKEs the values into place.

Lines 550 - 620 ask if the user would like to change the program name (to a maximum of 16 characters). Of interest is line 610 which, if the name is to be changed, blanks out the old name. This is in case the new name is shorter than the old one. Recently I moved to a street which had a shorter name than my last street, what do you think I saw on one of my magazine subscription labels? I'd told them of my new address, and now the end of the old street name was tacked onto the end of the new one! A good example of a poorly programmed mailing list. Not what you want to happen to YOUR program, huh?

Line 620 POKEs in the new name and we then give the user the option to write the new header to tape or change their mind. Incidentally, the funny character in quotes after the "IF K$<>" in line 660 is obtained by pressing the f 1 key. If the user doesn't decide to quit, we now SYS to our second M.L. routine at 725.

725 LDA #105 :

LoaD Accumulator with value 105. This number tells the 64 how long to make the tone on tape before it writes the header. This value is the one normally used by the operating system.

727 STA 171 :

STore our 105 in location 171, which is where the op. system will expect to find it.

729 LDA #60 :

LoaD Accu. with number 60. This is the low byte of the address of the cassette buffer.

731 STA 193 :

STore the low byte in loc. 193. This will tell the 64 where to find the data to write to tape.

733 LDA #3 :

LoaD Accu. with high byte of start of cassette buffer.

735 STA 194 :

STore high byte right after the low low byte.

737 LDA #252 :

LoaD Accu. with low byte of end of cassette buffer.

739 STA 174 :

STore it where the op. system will look for it.

741 LDA #3 :

LoaD Accu. with high byte of end of cassette buffer.

743 STA 175 :

STore high byte right after low byte.

745 LDA #1 :

LoaD Accu. with value 1. We'll use this for two things.

747 STA 184 :

STore the 1 where the op. system will expect to find a file number.

749 STA 186 :

Also STore a 1 where the op. system will expect to find a device number (1 for tape).

751 LDA #0 :

Put a zero in the accumulator.

753 STA 183 :

STore the zero where it will tell the op. system that the length of the filename is zero (no filename, or we might REALLY confuse the 64!).

755 LDA #255 :

Put value 255 in the accumulator

757 STA 185 :

STore the 255 where the op. system will look for a SECONDARY ADDRESS. (255 means no secondary address).

759 JMP 63595 :

JuMP to built in routine at 63595. (JuMP is like GOTO) This routine will now write our new header WITHOUT blanking out the cassette buffer. It also prints the "press record and play on tape" message for us! We don't need an RTS to end with because the header write routine finishes with one and that will send us back to BASIC automatically.

All that's left to do now is tell the user to press the stop button on the datasette and check for it with WAIT, and we then print our "mission accomplished" message and END.

Lines 700 - 840 contain a little information and the DATA for our machine language routines.

A few short notes:

At several points in the program there is a fair amount of cursor activity. This is to provide some screen formatting which makes the whole thing look a lot tidier and more professional. It's not necessary in something you only plan to use yourself but is certainly worth the effort if you expect other people to use it. (Especially if you're proud enough of it to put your name to it.)

The 14.3 seconds tape positioning time is correct for the datasettes I was able to test it on but I suggest you check your own datasette by trying to re-write the header of a short test program first. (10 print"hello",20 goto 10 should be fine to make sure the program LOADs and RUNs o.k. afterward.) If you have problems start by altering the tenths of seconds register first. The number in the DATA statements to change is marked, (only change this value between 0 and 9). If this does not seem to be enough you could alter the seconds value (also marked).

Changing it to 19 will make it 13 seconds, 21 will make it 15 seconds. This is certain to be all you need. If you alter the seconds register you will also need to re-adjust the tenths of seconds. I deliberately left out a checksum routine in the data reader to allow easy changes of these values, so be very careful when typing in the DATA statements.

Next month I intend to present a disk Block Allocation Map editor which is a little more versatile than those available at present. Don't miss the next *Australian Commodore and Amiga Review!*

FINALLY:

Michael Bone, of Strathalbyn, S.A. in the August A.C. & A.R. (yes, that's it's name now) suggested a column where if you have an idea you don't feel capable of programming, you could send in the idea and someone else could try to write it, and print the resulting program in this magazine. I suspect Michael already has one or two in mind! Anyway, I'm prepared to have a go at this, so send your ideas to me at 187 Errol St, North Melbourne, 3051.

I will NOT attempt to write full games, adventures, word processors, monitors, assemblers, spreadsheets, or databases, but routines, utilities and small programs of any kind are fine. ESPECIALLY NOT DATABASES!, the Adventurer's Realm Database has given me enough headaches already! Please include your address and if possible your telephone number as I may need to get back to you for clarification or more details of what the program is required to do. See y'all next month. ❑

Basic is easy Part 2

by Andrew Farrell

Learning is fun when you can experiment. You can't harm the computer if you try out some of your own ideas. When things don't work you may become frustrated. Just double check your typing and start again.

Now let's put our BASIC knowledge to work.The following program prints any times table by using the commands and statements described in Part 1 (*Australian Commodore Review* August Issue). Go on, type it in. Remember to press return at the end of each line. Don't forget to type zero not the letter 'o' when entering line numbers and amounts.

```
10 PRINT "Times Tables!"
20 INPUT "Please enter table to
calculate";T
30 PRINT T,"Times Table"
40 J = 1
50 PRINT J"x"T" ="J*T
60 J = J + 1
70 IF J = 13 THEN END
80 GOTO 50
```

We've added a few new statements, which I'll explain soon. First, here's how the program works.

Line 10 displays the program title.

Line 20 asks for the times table you wish to calculate. Notice a prompt is first displayed before the variable T is INPUT. Don't forget the semicolon before the T.

Line 30 reminds the user which times table is about to be printed. The variable T and the text "Times Table" are separated by a comma. Once the value for T is printed, BASIC moves across the screen to the next TAB position before printing the message "Times Table".

Each screen line is divided up into several TAB positions. Normally there is one every eight characters. On a forty column screen there would be five TAB positions. This is useful when we try to align a list of items underneath each other.

Since we are going to calculate our times table from one to twelve BASIC will need some sort of counter.

Line 40 sets J to be equal to one. Some BASICs need a LET statement in front of the J. This is what it looks like.

```
40 LET J = 1
```

Normally the LET statement is optional so leave it out if you don't need it.

Line 50 does most of the hard work. It displays the multiplication performed and the result. Notice the print statement used is quite complicated.

Variables and text can be intermixed. They may be separated by a comma, semicolon or placed directly outside the quotation marks. In our example a calculation is performed at the end of the line. The variable J is multiplied by the number we INPUT at the start of the program.

Line 60 increases our counter, the variable J, by one.

Line 70 - this is a new statement. The format is IF a condition THEN do something. The command checks to see if J is now equal to 13. If true the program halts with the END command. Any statements appearing after the THEN statement are only performed if the condition after IF was true. In our times table program the logic flows something like this :-

IF we've counted to thirteen THEN end the program.

If J is not yet equal to 13, the program continues on to line 80. Since there's still more to print, we then jump back to line 50 to continue.

If your screen display is a little cluttered when you run this program, try adding a few extra print commands. In my version, I've included the following lines:

```
25 PRINT35 PRINT
```

These simply print a blank line. You can insert new lines by stepping up your line numbers in fives instead of tens. By always spacing your line numbers out by ten, there's plenty of room for additions later on.

See if you can work out how to print your times tables up to 20 instead of 12.

Check out your user manual to see how editing functions work. Some computers use a special EDIT command. The Commodore 64 has full screen editing. This means you can move anywhere on the screen, make changes, press the return key, and your alterations are stored.

Certain keys allow letters to be deleted and inserted. Cursor keys move the flashing block on the screen left, right up and down. Learn these so that you can change your program quickly.

Here are the modifications to our times table program. If you can, just change the existing line. Alternatively, re-enter the entire line afresh.

```
20 INPUT "Please enter table to prac-
tice";t
```

In this line we have changed the word "calculate" to "practice".

```
50 PRINT j "x" t "= "; : input a
```

Line 50 is a little tricky. All remains the same until the inverted commas after the equals sign. Now the semicolon means keep printing on the same line. The colon tells BASIC it has reached the end of that command.

INPUT then asks the user to enter the answer to the sum displayed. We can put several commands on one line by separating them by colons. In this instance the INPUT command will ask for a number to be stored in the variable "a".55 IF a <> j*t then 50Line 55 is totally new. BASIC will automatically insert it between line 50 and line 60. The IF... THEN statement checks to see if the answer is correct. In essence the line reads : IF the answer entered (variable a) is not equal to j multiplied by t then GOTO line 50. In an IF... THEN statement we don't need to include a GOTO statement after the THEN command.

After these few changes, we can now test out our knowledge of each times table. At the end of a test, just type RUN to try a new table. See if you can add to the end of the program a line which reruns the program. It's easier than you think.

One problem with this program is the order in which the questions are asked. To make it a little harder, we could use random numbers, for the variable j instead of stepping up by ones. Next month we'll write a new program that does just that. ❑

The super page

by Paul Blair

If there is one aspect of the design of Superbase *(SB) that I find most commendable it is this - you can learn as little or as much as you like about it, and still get a great deal of use from it.*

"USER friendly" is about the most overused phrase I can think of (apart from the politician's "in place"), but it fits SB so well...

Most of us get by quite satisfactorily using the commands from Menu 1 and 2, but every so often we have to enter our own commands on the command line. These are transitory, and vanish when the computer is turned off. Rather than write them all down in a little book, these lines can be turned into programs using the PROG option, and saved on disk for future use.

After a little while you will probably have a small collection of these programs, together with all the junk copies you saved while you got them working just so. A month later you rock up to the computer, grab the disk you want.... now which program did what, which one worked? Never done that? I'll bet you have!

Memory jogger

So why not create a memory jogger, one that lists all the small and large programs you have done? Put the list up on the screen, select the program you want, and let the computer do the work. In other words, let's design a menu.

Superbase-The Book by Dr Bruce Hunt goes into menu-creation in quite some detail, and is recommended reading. He gives some good examples that are worthy of study. Let's build on them.

Every time you load SB, a small program named "START" is invoked. This sets up some working parameters such as paper length, printer type, the screen and a few other things.

What I propose is to change the standard START program into a menu. Our START program should contain at least the same initialization processes as the original, or else things will go wonky.

Next, we need to work out the options (menu choices) available. These might be (1) a printer listing (2) a label program (3) creation of a special list (4) change the file in use and (5) quit. You will have your own list - do a bit of planning, and even if the special program is not yet written, allow for it.

The programs that follow are the same but different. The 40 column version was originally devised by Brian Leighfield while he worked at Precision Software. It has been improved on, and an 80 column version added to work on the C=128.

> "User friendly is about the most overused phrase I can think of . . . but it fits *Superbase* so well"

The major difference is in screen layout. The 40 column version shows the menu items in 2 columns, and all four cursor movements are used to select an option. The 80 column version shows the menu in one column, and requires only the up and down cursor keys.

These are generalized programs, designed to allow you to customize them. After deciding on your choices, enter them as DATA statements at the end of the program. The first DATA statement is the number of options to be presented. After that, each DATA line holds one menu title, and a "help" comment. In action, this latter will be shown under the command line at the top of the screen.

There is a range of actions demonstrated. The first choice allows you to input further information. The second uses the FILE command from Menu 2 to permit a selection from the database file list. The third reverts to the standard menu system. The rest of the choices are set up to load and execute specific function PROG files of your own design. Quite a versatile system.

Both programs set up a screen of choices, and loop around (Lines 80-150 in the 80 column version), moving a "bar" across the options as you press the cursor keys. RETURN selects the option, and Line 160 branches to the action line. All the rest is formatting and data.

Before saving the file, rename the old START program to OLDSTART (you figure out how to do it!!), just in case you want to revert to the previous system. Now save START, and each time you start SB, a menu of your options will be presented to you. Of course, you can always swap back to normal (Menu 1/2) operation by selecting the appropriate menu item.

Continued on page 40

What's the offer?

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Games	GF
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Geography	RB
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Mathematics	MC
Mathematics	MD
Mathematics	ME
Mathematics	MF
Mathematics	MG
Mathematics	MH
Mathematics	MI
Mathematics	MJ
Mathematics	MK
Mathematics	ML
Mathematics	MM
Mathematics	MN
Max Subroutines	99
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Science	SC
Science	SD
Science	SE
Science	SF
Science	SG
Science	SH
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Public Domain Software

Saturday Computer Services

Following the success of our special disk offer, we have decided to provide a new service to readers of *Australian Commodore Review*. Each month we will publish an up to date listing of our catalog. There will also be a more detailed listing of what is on one particular disk. You will be able to order any four disks for $30.00 - that's including package and posting.Simply fill in the order numbers of the disks you want, and enclose a cheque or money order for thirty dollars made payable to Saturday Computer Services. Send to Public Domain Software, 19A Frederick St, Putney, 2112. Your order will be dispatched the same week we receive it.

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40 Column Version

```
10 rem Superbase start program / 40 column
20 sp$="[40 spaces]"
30dimx$(10,2),y$(10,2):brkon:gosub 350:goto 220
40displaychr$(147)@0@16,3$144"MAIN MENU"
50 display @4,21"Choose option using CRSR keys"
60 display @4,22"Press RETURN to select option";@0
70 read a:a1=int(a/2):for c=1to 2:for i=1to a1:read
x$(i,c),y$(i,c)
80next:next:restore:a2=1:a3=1:a4=1
90display@0@+chr$(145)+left$(y$(a3,a4)+sp$,40);@0
100fori=1toa1:forc=1to2:a$=x$(i,c):x=((c-1)*21)+1
110 a$=chr$(31)+left$(a$+sp$,17)
120 if i=a3and c=a4then display &19@x,9+i;@+a$;:goto
140
130 display &19@x,9+i;a$;
140next:next:a$="":geta$:ifa$=chr$(13)then 200
150 if a$=chr$(17)and a3<a1then a3=a3+1:goto 90
160 if a$=chr$(145)and a3>1then a3=a3-1:goto 90
170 if a$=chr$(29)and a2=1then a2=22:a4=2:goto 90
180 if a$=chr$(157)and a2=22then a2=1:a4=1:goto 90
190 goto 90
200 a=a3:if a4=2then a=a3+a1
210 return
220gosub40:onagoto230,290,300,310,320,330
230 display @0@1,7$144"Enter Database Name :";@:ask
&16@22,7;a$
240 display @0@1,8"Unit number (8 or 9)  :8";@0
250 ask &1@25,8x:if x<8or x>9then goto 240
260 display @0@1,9"Drive number (0 or 1)  :0";@0
270 ask &1@25,9y:if y<0or y>1then goto 260
280 database a$,x,y:goto 220
290 file:goto 220
300 menu
310 execute "sort"
320 execute "labels"
330 execute "delete"
340 rem
350 rem *** set system parameters ***
360 lmarg 1:rmarg 80:plen 70:tlen 70:pdef 0:pdev
4,7,0:rem mps1200
370 lfeed 0:cont 1:space 0:across:screen 0:date
"01jan86":return
380 data 6
390 data "Select database","Select Database, Unit, Drive"
400 data "Select File","Get a File from Catalog"
410 data "Superbase Menu","Select Superbase Menu 1"
420 data "Run Sort","Sort current file"
430 data "Run Labels","Print Labels" 440 data
"Housekeeping","Run Housekeeping Utility"80
```

80 Column Version

```
10 rem Superbase start program / 80 column
20 sp$="[60 spaces]"
30 dim x$(10),y$(10):brkon:gosub 280:goto 160
40 display chr$(147)@0@34,3"MAIN MENU":
50 display @28,21"Choose option using CRSR
keys"
60 display @28,22"Press RETURN to select op-
tion";@0:
70 read a:for i=1to a:read
x$(i),y$(i):next:restore:a3=1
80display@0@+chr$(145)+chr$(30)+left$(y$(a3)+
sp$,80);@0:
90fori=1toa:a$=left$(x$(i)+sp$,19):cx=30
100 if i=a3then display
&19@cx,9+i;$158;@+a$:goto 120
110 display &19@cx,9+i;$30;a$
120 next:a$="":get a$:if a$=chr$(13)then
a=a3:return
130 if a$=chr$(17)and a3<athen a3=a3+1:goto 80
140 if a$=chr$(145)and a3>1then a3=a3-1:goto 80

150 goto 80
160gosub40:ongoto170,230,240,250,260,270
170 display @0@cx,6"Enter Database Name
:";@:ask &16@cx+21,6;a$
180 display @0@cx,7"Unit number (8 or 9)  :8";@0

190 ask &1@cx+24,7x:if x<8or x>9then goto 180
200 display @0@cx,8"Drive number (0 or 1)
:0";@0
 210 ask &1@cx+24,8y:if y<0or y>1then goto 200
220 database a$,x,y:goto 160
230 file:goto 160
240 menu
250 execute "sort"
260 execute "labels"
270 execute "delete"
 280 lmarg 1:rmarg 80:plen 70:tlen 70:pdef 0:pdev
4,7,0:rem mps1200
290 lfeed 0:cont 1:space 0:across:screen 0:date
"01jan86":return
300 data 6
310 data "Select Database","Select Database, Unit,
Drive"
320 data "Select File","Get a File from Catalog"
330 data "Superbase Menu","Select Superbase
Menu 1"
340 data "Run Sort","Sort current file into new or-
der"
350 data "Run Labels","Print Labels from Current
File
```

Arcade Action

by Darren Brown

HI AGAIN for another month. Looks like new software is running a bit slow this month, but there is a bit around, and luckily just enough for this section.

Comics

Now, here's something a bit different: a game within a comic within a game! In this great new game from Accolade and Ozisoft, called *Comics*, you play dashing comic strip hero Steve Keens: Private Spy.

You're the leading character in a frame-by-frame adventure story, with one frame appearing on your screen at a time. But you can also control your destiny by changing the dialogue and the course of action in the story. Different choices will mean different plots.

At various points of the story a series of frames will lead you to an arcade-style game, which Keene will have to come through in one piece in order to be able to continue with the story. Can he do it? It is up to you. This game can be boring when you are playing the comic strip bit, but the funny dialogue that Keene comes up with will keep you amused.

The game, taking three double sided disks, is sure to take a few hours to complete. If you like comics, then you'll love this new adventure comic, the only thing is, the paper and ink is your computer.

Trio Hit Pack

If you have ever bought software from Elite, especially the Hit Packs, you will know that they only use good quality games. I recently saw their latest enterprise. It's called *Trio Hit Pack*, comprising three great games.

1 *Great Gurianos* — a supreme warrior has to battle his way against other soldiers that attack him on his travels. There isn't much to this one, but it offers plenty of enjoyment.

2 *Airwolf 2* — You're back in the ultimate helicopter, the only one that can fly at speeds above mach 2. If you remember the original *Airwolf*, you will know that it didn't offer much action, and was very hard to play.

Well, the sequel fixed all that boredom from the first by being a shoot-em-up. You have control of the chopper as it scrolls from right to left. Shoot everything that moves. But there is a catch, while shooting everything, there are floating cities that also fire at you, making your unknown mission even harder. I found the game incredibly hard for a shoot-

em-up, but it offers plenty of addiction.

3 *Cataball* — This game offers an uncanny resemblance to *Wonderboy* or concepts of the same nature. You have four balls that bounce on your screen that scrolls from right to left. You have to hit certain objects while avoiding others to reach a goal at the end of the level and this is no easy task. Fortunately, you also have three lives to get you through the game. This game is a very addictive one and wont be easy to complete.

California Games

Well, Epyx have done it again, they had to turn out another one of their most loved sport games. They started off with *Summer Games*, then they wrote *Summer Games II*, if that wasn't enough, they went on to write *Winter Games*. After thinking they had every sport on disk and tape, they discovered one more, *California Games*.

And, they have turned out another winner. This time they went all out and, there are three disks of data, not the usual two. California's weather, with continual days of 25 degrees or more,means people do many things on the beaches and around the town of Los Angeles. Sunny all the time, means swimming, and surfing. Spending days in the parks throwing frisbees, or just taking a leisurely stroll on your roller skates.

These are just a few of the sporting events on this California Games. Equipped with the usual practice or compete in the events and the famous world records, I am sure anyone who loved their previous efforts, will definitely buy this new one. Should be around soon.

Amiga games

As I said in the start, there wouldn't be much this month, but for all you Commodore 64 buffs, that's about it. Hey! You Amiga gamesters, come back here a sec. Yeah, you. Don't think this section is solely for C64 buffs.

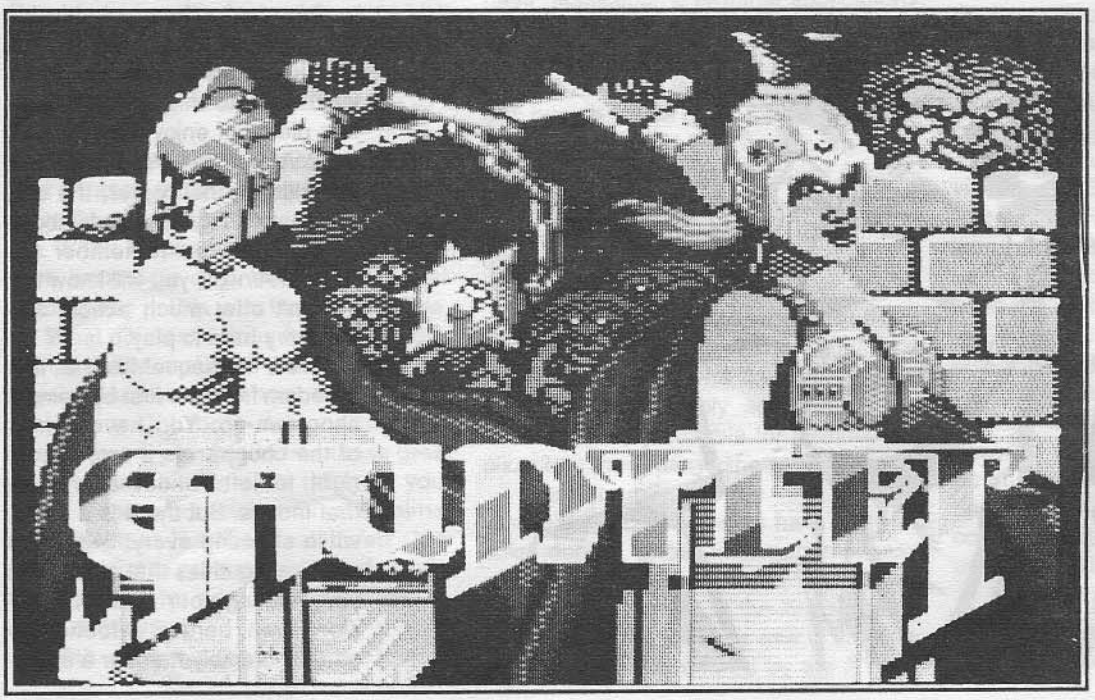
Unfortunately, there is nowhere near the amount of new release software available for your computer, which is a pity, because all of us who have bought the Amiga know what a really great machine it is and what it is capable of. (The only thing is, that over in England, they don't see it that way as most of the population have Atari ST's and so the programmers are turning to this instead.) Well, believe it or not, there is software on its way. I have only heard of the following, no proof, but I'm sure they will get here eventually.

One game I know a lot of people are waiting for is *Gauntlet*, and from what I have heard, the digitised sound and the graphics will be amazingly close to the real thing.

Elevator Action looks like it might be another new release on the Amiga, but again no hard evidence. I think most of you know that numerous well-known titles are coming. When I get these great new games, I'll rave on here so much that you'll be rushing out to buy them!

But until next month, when hopefully more new titles will be around, check out the local software suppliers and see if they have got this month's games. To all the Amiga readers: don't be despair at the lack of software, it will soon pick up, and if anything new comes around, be sure to get your copy of the *Australian Commdore and Amiga Review* and look for a review right here in Arcade Action.

Until next time, enjoy life and keep reading this issue. ❑



Adventurer's Realm

by Michael Spiteri

Australia's First Help Booth

Yes folks! Adventurer's Realm is setting up a help booth in the heart of Melbourne. It will be located in Toyworld, Swanston Street, Melbourne and should be operational by the end of September.

Toyworld are setting up a large computer software centre which will stock the largest range of computer software in Australia. They currently stock the largest range of adventure games in the state, and are already expanding on strategy games.

The **Realm Help Booth** will offer the following . . .

1) You (Yes, you! Whoopee! Wow!) will get to operate the newly created simple-to-use Realm Database that provides tips for almost every adventure available.

Just simply follow the instructions on the screen, and if you get stuck yell at one of the Toyworld staff (ie, ask for assistance - not abuse the hell out of them).

The service is free (yes, free!!). Aren't we nice!

MS: *However, if you are overwhelmed by the help given, all donations would be gratefully accepted - just mail to the address printed below.*

2) A free (yes, free again. I can just see the $100 donations pouring in now!) mail service for all letters to the Realm. Just post your letter into the box provided and it will get to me eventually. And guess what, you don't pay postal fees.

Any clues and tips received by the Realm will go directly onto the database.

If the Help Booth proves popular, we will try to set more of them up throughout Australia.

The Help Booth, in addition to the help service already offered, and the soon to be introduced telephone hot-help-line (around Jan 88) means Australian adventurers will never be stuck again. (Unless you do something silly like walk into a puddle of superglue).

National Australian Top Ten Adventure Games

(compiled by Toyworld - City Store)

1) Bard's Tale II
2) Leather Goddesses of Phobos
3) Bard's Tale I
4) Moonmist
5) The Pawn
6) Hollywood Hi-Jinx
7) Lord of the Rings
8) Labyrinth
9) Tass Times in Tonetown
10) Aliens

Help and Chit Chat

Can you help those stuck in adventures?

Can you give tips in general?

Know of any adventure funnies?

What are your favourite adventurers?

Have you had your say in the latest debate?

What are your views on various adventure topics and games?

Do you have anything to say concerning adventure games?

Or most importantly . . . are you stuck in an adventure game?

The address to write to is:

Adventurer's Realm
(GEM or ACR)
1/10 Rhoden Court
North Dandenong Victoria 3175

(or post it at the help booth)

Important things to remember when writing to the Realm . . .

1) If you are asking for help, enclose a stamp, so I can reply.

2) Don't ask for maps or complete solutions (a big NO NO).

3) Mark clearly your name (for public humiliation), address, and the magazine you are writing to (*ACR* for *Australian Commodore Review*, *GEM* for *Home Computer GEM*, and BOTH for both magazines).

SPECIAL OFFER TO REALM READERS

Take this article to Melbourne Toyworld (City Store) and they will give you a 10% discount off each of their software.

(*Sydney readers may have to wait for the new bullet express train before adventuring further south into the land of rain and sleet* - **Ed**.)

Adventure Chit Chat

Karla Slack (Springwood, NSW) writes "Is *HitchHiker's Guide* available on tape?" The answer is no. And this goes for ALL Infocom games (*Planetfall, Starcross, Zorks, Trinity, Leather Goddesses* etc etc).

All of these games NEED the disk drive throughout the whole adventure. If you take the disk out during the game, funny things will appear on the screen.

I doubt if Infocom will ever release games on tape - it's such a daunting task!! Gameplay would also be too slow!!

Simon Newton of Sadlier, NSW writes "How about a national competition? Yeah, get a game written to create a challenge, sell it to readers, and see who can solve it first."

MS - *Well, what do the readers think?*

Another suggestion from Simon: "Print a page of adventure games known and their recommended retail price, computer and difficulty."

MS - *That sounds like a good idea...we'll see what we can do.*

Remember Wolfe "I hate *Pawn*" the Enchanter in last month's Chit-Chat? Well he's back again. He also suggested The Realm should have a contest....

"Why don't you have a competition (say, who hates *Bard's Tale* the most). Yes, *Bard's Tale* is the latest game to come under the wrath of the Wolfe.

This is how he starts his letter . . .

"I had just played another game of the *Bard's Tale* and I decided that someone else really should have to share my misfortune. This is truly the worst of its class. This game is so bad even my little brothers refuse to play it and they will play 300 year old games like *UFO Attack* for hours on end . . ."

After complimenting the graphics & sound he then goes on to say . . .

" . . . It is singularly the most boring game I have ever played. It's just one huge dungeon bash. Even the town is just one huge dungeon (actually, it's not that big anyhow) with buildings instead of walls. The game can only be saved in one location. And the save sequence!!! You are only saved with objects you have gathered, not your extremely hard-earned money. To save, you can't just hit the save line or key, you have to take each member out of the party and save them separately (truly boring) or leave the game...I have found that the money does save if you leave the game."

What do other people think about the comments made by Wolfe "I hate *Pawn* & *Bard's Tale*" the Enchanter?

Vivienne Slater, now in Canberra, joins Wolfe in putting down *The Pawn*, though not as harshly . . .

"The ending to this game was very unsatisfactory."

She also raises a good subject for debate...

"I'd like to see an end to mazes! I hate, loathe, and despise mazes."

MS - *I know exactly how she feels. Was the Zork I maze really necessary? Did the Royal Puzzle in* ZORK III *have to exist? And why did I stop playing* Asylum*? Because it was one big . . . dare I say the word . . . maze. Aren't computer adventure games mazes anyway? So why put a maze inside a maze - especially boring ones (some software writers put them in as a cheap & nasty method of increasing the number of locations). What a ghastly concept!!*

★★★★★★★★★★★★★★★★★★★★

Electronic Adventure Help

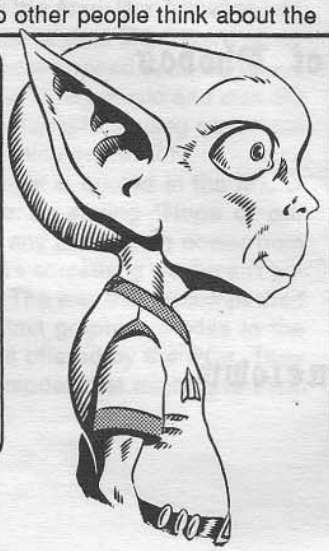
A number of help facilities are available on electronic magazines such as Viatel and Teletext.

On Viatel, 642 GOLDLINK offers a help facility called Gamers Board (Viatel page no. 642916), and MICROTEX 666 offers a help board on GAMETALK.

Also, on page 69173 of Viatel there is yet another help facility, entitled GAMEHELP.

On Teletext (Telephone 470 6827) there is another GAMEHELP on page 332.

(Thanks to Bill Weeden, Nth Clayton, for this info.)



Strategy Section

You may be wondering what happened to Barry "Bomber" Bolitho's reviews in the last issue.

(*We ran out of space!* - **Ed**.)

Anyhow, they're printed in this issue. If you're having problems with strategy games, write to:

REALM'S STRATEGY SECTION
GEM or ACR
1/10 Rhoden Court
North Dandenong, Victoria 3175

Problems !!!

Mark Horvath of Port Macquarie, NSW is stuck in a few games . . .

ZZZZZzzz - How do I cross the road?

(**MS**: *Answer- Look right, look left, look right again. When the road is clear of traffic, walk straight across the road, DON'T RUN!! Seriously, put the guns away, can anyone ZZZzzz across the road?*)

See-Ka of Assiah - How do I get the casket from the tower? What is the cloak and harness for?

Dracula Pt2 - How do I enter the castle from the courtyard?

And finally in . . .

4th Protocol- I don't seem to be able to do anything. I solve 10% and I'm sent to the West Parklands. I keep losing my watchers. Who do I watch?

Gerry Phillips of Glen Waverly, Vic., is stuck in ***Spellbreaker***. How does he solve the problem in the Outer Vault. It is the problem concerning genuine and fake cubes.

Andrew Sopar of Croydon, Vic is stuck in many, many (**MS**-*another Sigh!!*) adventures. Can anyone help Andy in the following . . .

King Solomoms Mine Pt1: How does he cross the bridge, and what are the best items to take at the trading post?

ZZZZzzzz - He can't get onto the bus or into the mansion or into the pit.

Se-Kaa of Assiah - How do I harness the wind for the Black Guardian?

(**MS**: *I think you need a casket - see Mark Horvath's question*).

How do I get past the dwarf?

Holy Grail - How do you get past and/or rid of the Knight who says "NIC"? How do you get rid of the 3-headed knight?

Mad Mummy - How do you open the cases and how do you get past the stairs?

Ballyhooer of the month goes to Glen Christie of Blackwood, South Australia. Here are his questions.....

1) Do I follow the man on the cage?

2) To Phillip Mayer - Where did you find the ladder?

3) When does the meeting start, and how do I get to it?4) Are the props in the prop tent usable?

5) Can I use the Lion Stand?

(**MS**: *Yes!! Very important! See July ACR*)

Ben Anderson is stuck in ***Leather Goddesses***. How do you cheer up King Mitre?

And Karla Slack is STILL stuck in Spook City in ***Never Ending Story***. She thinks maybe Steven Suthers can help her. Are you out there, Steven?

She also wants to know where the Iron Key, Spider's Web and Golden Key are.

More problems!!

Simon Newton is stuck in many!!

Ninja: This one's a killer. I can't solve it at all!! So when I die (which is often) I have to restart from the beginning.

(**MS**: *Yes, that usually happens in most adventure games.*)

How do I get past the Ninja guards at the black Altar?

Kentilla: How do I get across the Serpent Sea without dying?

(**MS**: *Steven seems to be dying alot recently.*)

Sea Base Delta: How does Steven "get the stupid hen to give me the stupid egg!"

Finally Richard Coyte of Stirling, SA, is stuck in the disk version of *The Hobbit*. How do you kill the dragon? (Before writing with an answer, remember that the disk version differs slightly from the tape version).

Debate Debate Debate Debate Debate

The newest debate concerns Infocom games. Very many stores only stock one or two titles, very few stores stock the entire range. Why?

"Infocom games for the 64 are too expensive - they never sell," says a representative from Maxwell's Computer Centre, Armidale.

"However, we do stock the complete range for the Amiga, as $80 is the standard price for Amiga software.

"So, Infocom is affordable to the Amiga owner, but not to the Commodore 64 owner."

"We stock the entire range of Infocom for the 64 - Infocom is very popular - the most popular" says Martin Oakes of Toyworld, Melbourne, "It's price vs quality - you get what you pay for!!"

Fergus Bailey, of the Technical Book & Magazine Co, Swanston St, Melbourne, states that they do not stock the Infocom range because they have difficulty selling the software.

"We can order in any Infocom game for someone, and we provide a mail order service for all States." I noticed that Infocom games for the 64 sell for around $50. *Lord of the Rings* sold for $40, and it is produced in Australia and sells like hot-cakes. Why? Maybe it is because *Lord of Rings* is available for datasette owners.

What happens if Infocom released their stuff on tape (which is highly unlikely)?

Next month a spokesperson from Imagineering (the Australian distributors of Infocom games) will give some insight into the debate.

Meanwhile, I want to hear from those stores who don't stock Infocom games, and also from those people who don't buy Infocom games.

Zorker of the Month

Hopeless ZORKER OF THE MONTH goes to Nick Watkin of Knoxfield, Victoria who started his letter like this . . .

"I noticed a little box in the column entitled "Zorker of the Month" and from this I gathered that you get more than a few enquiries about the game. Well, in the best interests of the abovementioned box, here's a few more enquiries . . ."

Now come on, Nick. Do you really think I ENJOY replying to Zorkers? Obviously you are new to the column. I cannot think of a better way of making you welcome than with this most prestigious award.

(To others out there who are not sure what this part of the column is all about, I award ZORKER OF THE MONTH title to the MOST IRRITATING Zork player in the world, if not the universe.)

Realm Help

Here's many tips for many adventure games supplied by many adventurers - including a **LORD OF THE RINGS SPECIAL.**

For: David McKinney
From: A.J. Soper and Mark Horvath
Game: *ZZZzzzz*

Help: When at border post pull bike. Now go to the igloo and ring the bike bell. Give bike to the Sandman and enter igloo (east). By giving Sandman the bike you can thumb a lift at the road.

Holy Grail: Carry a baseball glove and wedge in the castle.

Kentilla: Take Timandra to Zelda, and take anything you want. Then go to Typhon's castle and wear the ring in the lab to discover another bedroom. Examine the bed and dip what you find into the barrell - but not the ring.

Colossal Adventure: Release the bird to kill the snake.

For: Chris Wongmann
Game: *Aztec Tomb Revisited.*

Help: You can only go south at the mud. If you feel you are being watched - run east.

Go boat - Disembark to go to the island. The bird's head is in the opening location.

(The above few tips were supplied by Mark Hovarth. Mark's interested in purchasing a copy of the original *Aztec Tomb* for the 64. If anyone has one to get rid of, write to the Realm)

Thanks to Glen Christie, the Realm now has information on obtaining the first 150 points in *Ballyhoo*. So write in if you are stuck!!!

Castle of Terror: Examine ladder, then rung. Insert rung into wheel at castle to lock it. Hang around bar for another drink.

The Pawn: You can't move the wheelbarrow. Ask Kronos about wristband. To get past the dragon type "point white at shadows" and then "shine white at shadows". Throw the poison bottle at Kronos.

H.H.G.T.T.G: Enjoy the captain's poem!!

(Above hints supplied by Mario Moeller, Greenvale, Vic.)

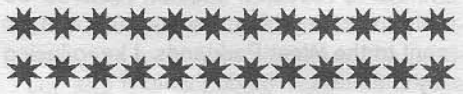
For: Seng Mun Looi
From: Vivienne Slater
Game: *The Pawn* & *Aztec Tomb*

Help: (*Pawn*)Show the note to the guards to get past them.

(*Aztec*) The elf/gnome is up a tree. Rope is needed for this problem.

(*Leather Goddesses* - Courtesy Vivienne Slater)

"There is a black circle (at the bottom of the well) that takes you straight to the Royal Barge. You'll have to set the barge in motion, escape on the raft, and then find your way back to the circle. With proper timing and a bit of luck you'll find yourself safely past the ion machine.



Adventurer of the Month

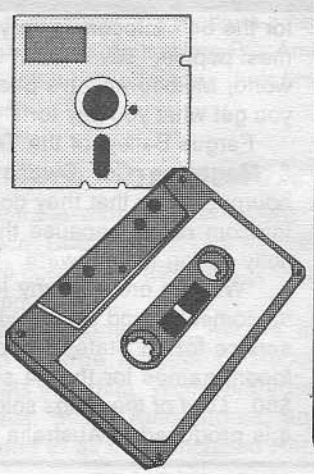
Alex Harvey has to be Adventurer of the Month, for not has he answered almost every Lord of the Rings problem sent in, but he even supplied the Realm with a map ! Thanks Alex, I'm sure you have saved a lot of Hobbits.

Can anyone help Alex in Level 9's SNOWBALL? His problems are as follows....

1) How do you revive the woman?

2) Is it possible to survive at the top of the space ship?

3) Are there any special colour codes?



☆ LORD OF THE RINGS SPECIAL ☆

Thanks to Alex Harvey, many of the *Lord of the Rings* players will be out of trouble. Alex also drew up the *Lord of the Rings* map.

For: Peter Davies
Problem: Green Knight
Help: Keep entering KILL KNIGHT (without sword) until something good happens (!).

Problem: Red Lady
Help: (Don't get seduced, whatever you do!!) Kill her with your sword.

Problem: Sam & Pippin in fissure.
Help: Go to Tom's joint and enter SAY TO TOM "HELP" then go SW. Say to Tom "OPEN FISSURE" and whammo!!

For: Peter Newman
Problem: The Black Riders
Help: Duck off the road

For: Karla Slack
Help: Go to the crossroads then go n.w.w.s.sw.s.e.ne. Don't worry about what Strider does. Just remember where you leave him!! To find more elfstones, look under the pot in the garden shed. Radagast should also give you one.

For: D.Walch
Problem: Another Knight
Help: Wait in the square room until your enemies enter. Type "KILL KNIGHT WITH SWORD

Strategy Section

by Barry "Bomber" Bolitho

Strategy games have come of age, and a lot of the credit for this must go to Strategic Studies Group (SSG).

Battlefront and *Russia*, the latest releases from SSG, further expand the horizons of war and strategy games. We first saw SSG in action with *Reach For The Stars* and *Carriers At War*, then came *Europe Ablaze* - the air war over Britain & Germany.

Authors Roger Keating and Ian Trout have literally come down to earth and given us old tankie gamers a new lease of life! Every game designer must eventually follow Napoleon and Hitler into Russia - thankfully, SSG have succumbed to the lure of the steppes. Unlike many of their predecessors, including the two just mentioned, they did not get bogged down.

BATTLEFRONT

The package is presented in an album type format with four map cards, two menu cards, disk and an easy to follow players manual.

Battlefront sets the scene for corps level command of four well chosen scenarios. These are: Crete 1941, Stalingrad 1942, Saipan 1944, and Bastogne 1944. Included in the package is a game design kit - a powerful utility that allows you to vary the scenarios, or to build your own. Sounds complex? Indeed it is!

Not to worry, all of the complexity, as well as all book-keeping, is efficiently handled by your computer - after all, thats what it's for, right?

The main thing needed to use the design kit, is time. There never seems to be enough!! Be patient, work through the menus, add your own imagination, and the possibilities are endless!

What a bonus the design kit is for 'what if' enthusiasts & all those interested in military history. Learning game play procedures is made very simple by the careful step by step walk-through players manual.

The simulation is menu driven and the nuts and bolts are clearly explained by a learning tutorial that will get you into the game straight away.

SSG have wisely stuck to the same menu system that worked well in *Europe Ablaze* and the excellent *Carriers at War*.

After all, when you're on a good thing, why stop? Simulation games must be complex to be realistic; this is a well researched and detailed game that is presented to the player in a format that is quickly learned and easy to play without losing any realism.

The players are free to take command of an army corp of either Axis or Allied forces and can slug it out with the computer as opponent, or face to face with each other. Players can conduct amphibious and airborne assaults, meeting engagements, mobile defence operations, set piece battles and with the design kit, are limited only by their own imagination.

What a boon for the solitaire gamer. The biggest problem you will have is to win the battle. Should you expect to lead your troops into battle you will be disappointed, it's not that type of game. You, as commander, will plan strategy and give orders to your divisional and regimental headquarters. Movement and combat resolution are handled by the computer, you have enough to do, as the strategic and tactical decision making is all yours.

A game save option is available, and very useful. Should you tire of being in the fray, the computer will do battle, playing both sides while refreshments are being served! Thirsty work, all this fighting.

Watching the computer battling its self is an interesting exercise for the historian. *Battlefront* is a must for any armchair general; it rewards sound strategy and good tactics.

SSG has another winner!!

RUSSIA

When the German Army invaded Russia in June 1941, almost 50 million combatants were involved for over four years.

SSG's latest release titled *Russia* simulates this enormous struggle in the east attempt.

Happily SSG have got it right, this simulation works! The Russian campaign became the greatest military struggle in the history of mankind. The successfull German war machine anticipated a short campaign that would knock the Soviets out of the war by Christmas! How many times have we heard that? This would remove any threat to Germany from the East.

The German armed forces, after making breathing space in the East, would then resume the war in the West. Their ultimate goal: world domination.This time the Blitzkreig proved inadequate to the task. Gigantic conflict between two implaccable foes that became the greatest grudge fight in history.

We have seen a prolific number of simulations on this fascinating subject, some good, some a bit ho-hum. SSG's *Russia* is the best of the batch up to this time and would tempt any strategist, wargamer (old tankie types?) to race out and buy a computer just to play it.

When you can take supreme command of either Axis or Soviet forces, you are definitely playing a grand strategy game. You may, however, choose to command a single theatre of operations.

As in *Battlefront*, you may take on any of the high command roles of either side, all forces not assigned to human hands are controlled by the computer.

The physical presentation is of the same high quality as its predecessors.

The album cover illustration reflects vast endless terrain in keeping with the

SOME ADVENTURE FUNNIES FOR HOBBIT and LOR

In *Hobbit*, in the wine cellars, enter "DRINK WINE" then SIT.

In Lord of Rings Pt2, when the riders are chasing you, give the ring to them (MS: *To all Frodos!! This is an adventure funny!!! You have been warned!!*)

mood of the game.

There are two map cards, four menu cards, disk, and a comprehensive players manual, game and three scenarios.

Leningrad, the first scenario, is the shortest and has been chosen for a learning tutorial. Once again we are painlessly introduced to SSG's structured menus.

The second scenario is the axis assault on Stalin's City, and the subsequent Soviet counter attack.

The third scenario is the clash of armour at Kursk in 1943. The campaign game manages to condense this entire struggle, from June 1941 to May 1945, into a C64 without losing any of its punch.

Should you wish, perhaps, to invade Russia in 1939, or fight on to 1946, then the game design kit will make this possible.

The icing on the cake is in the game design kit, once again the possibilities are endless. *Russia* is played in weekly turns, and as in *Battlefront*, all book keeping is handled by the computer. As you become familiar with the different menus, all the information you require to issue orders will become available.

The ability to manoeuver, fight, reinforce, supply and deploy your formations is through the menus, in fact this is quite important! Overextend any of your formations for long and they will fold up on you, perhaps when you need them most. a good commander.

The game save option is a handy tool for saving a game, particularly just before trying some daring (or stupid) strategy. This simulation is a faithful depiction of a monumental struggle. Its enormous complexity has been reduced to an easy managed order menu structure. This gives you the freedom to make the decisions that shaped history, or maybe you can rewrite that history?

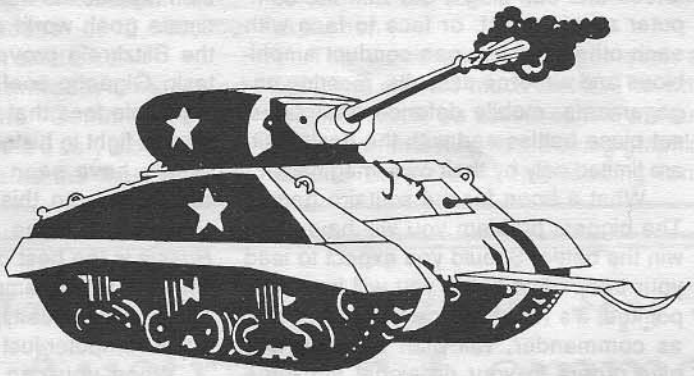
This simulation is highly recommended for all strategists from novice to the keen historical gamer.

LEGIONS OF DEATH

Legions of Death, from Lothlorian, is a simulation of the Punic Wars, a major conflict between the Roman Republic & Carthage.

I am sorry to tell you that Hannibal and his elephants do not feature in this game. The game concentrates on the vital factor of naval supremacy. Whoever controlled the seas would also control the economic resouces of the area.This would ultimatly decide which nation would be dominant in the Mediterranean.

The Punic Wars lasted from 264 BC to 146 BC. In 264 BC the expanding Roman Republic bumped head on with Carthage on the strategically important island of Sicily. Carthage, a trading nation, gained considerable power through her vast navy. Rome's power had come through conquest.



Each nation recognised the potential threat posed by the other and it was inevitable that only one nation would survive.That nation was Rome.

In 146 BC the city of Carthage was totally destroyed.

This game is either joystick or keyboard controlled and can be two players head to head, or battle the computer. In one player mode you will command the Carthaginian navy. The computer always plays the Romans.

I always liked playing the underdog anyway. You start with 1000 gold pieces, and here the strategy begins.You have to build your fleet. How many and what type of ships should you build? A lot of small under armed fast vessels? Or a few large, well defended ones?

You have a wide choice of ship types to choose from and also a good choice of equipment and weapons. However, 1000 in gold only goes so far, so choose wisely.

Carthaginian ships use a rostra, a ram, to help teach Romans how to swim. The Romans put their faith in their infantry, and prefer to grapple and board their opponents. They would then rely on training and discipline to win the day. Combat is a constant possibility, as Roman vessels gang up on you to prevent the transport of essential gold from tribute cities to Carthage.

Without gold, damaged ships cannot be repaired, nor new ships built. The control of your fleet is not easy, wind changes and enemy action upset the best laid plans. A flow chart of the game controlling icons helps make gameplay simple to follow. The icons appear at different points in the game and have different results. I found that using icons (for the first time) made the issuing of orders & intelligence gathering quite simple.

For example, an icon of a ship with buy, speed, or rebuild is self explanatory. The game save icon is in the shape of a cassette. Using the view icon you can scan the map with the cursor and get information on ships, including enemy, ports and gold reserves.

Your ships, when under the cursor, appear in detail in one of the screen windows. When combat happens, a brief action sequence is graphically depicted in another window. A clever bit of programming, this!!

The view on your monitor is multi-screen, divided into several windows. These have details of large and small scale maps of the area.

Gameplay presentation is excellent.

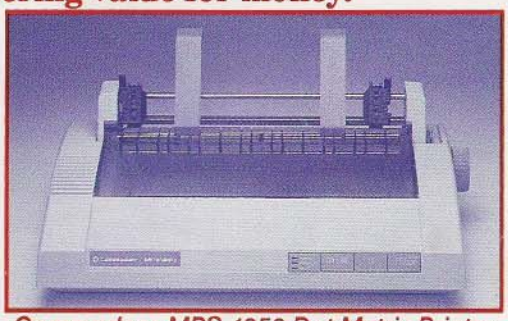
This is a challenging and most interesting game that makes it easy to concentrate on your strategy.

The game reviewed is on tape for the C64, so take heart all you strategists not lucky enough to own a disk drive. There are a lot of good strategy games available on tape, and this one is a bonus. The cassette box is small and the cover does not do justice to the goodies hidden inside. Keep an eye out for this one, it is a little gem of a game and should not be passed over for the more glossy packages on the shelf. ❑

COMMODORE PRINTERS

For every Commodore computer there is a Commodore printer that is designed to cover your specific needs whether you are an owner or user of a Commodore 64 or 128, an AMIGA 500, 1000 or 2000, a PC 5, 10, 20 or 40.

Commodore printers are designed to give you total compatibility with the rest of your computer system with built-in high performance and at the same time offering value for money.



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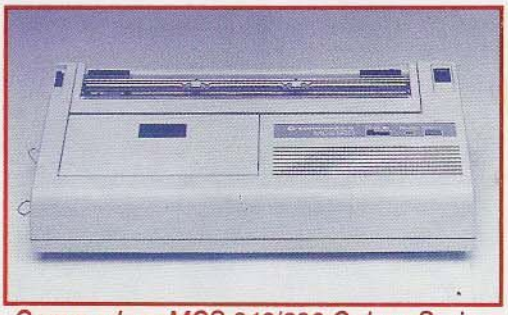

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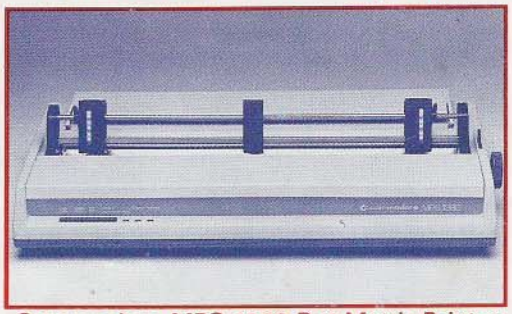

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